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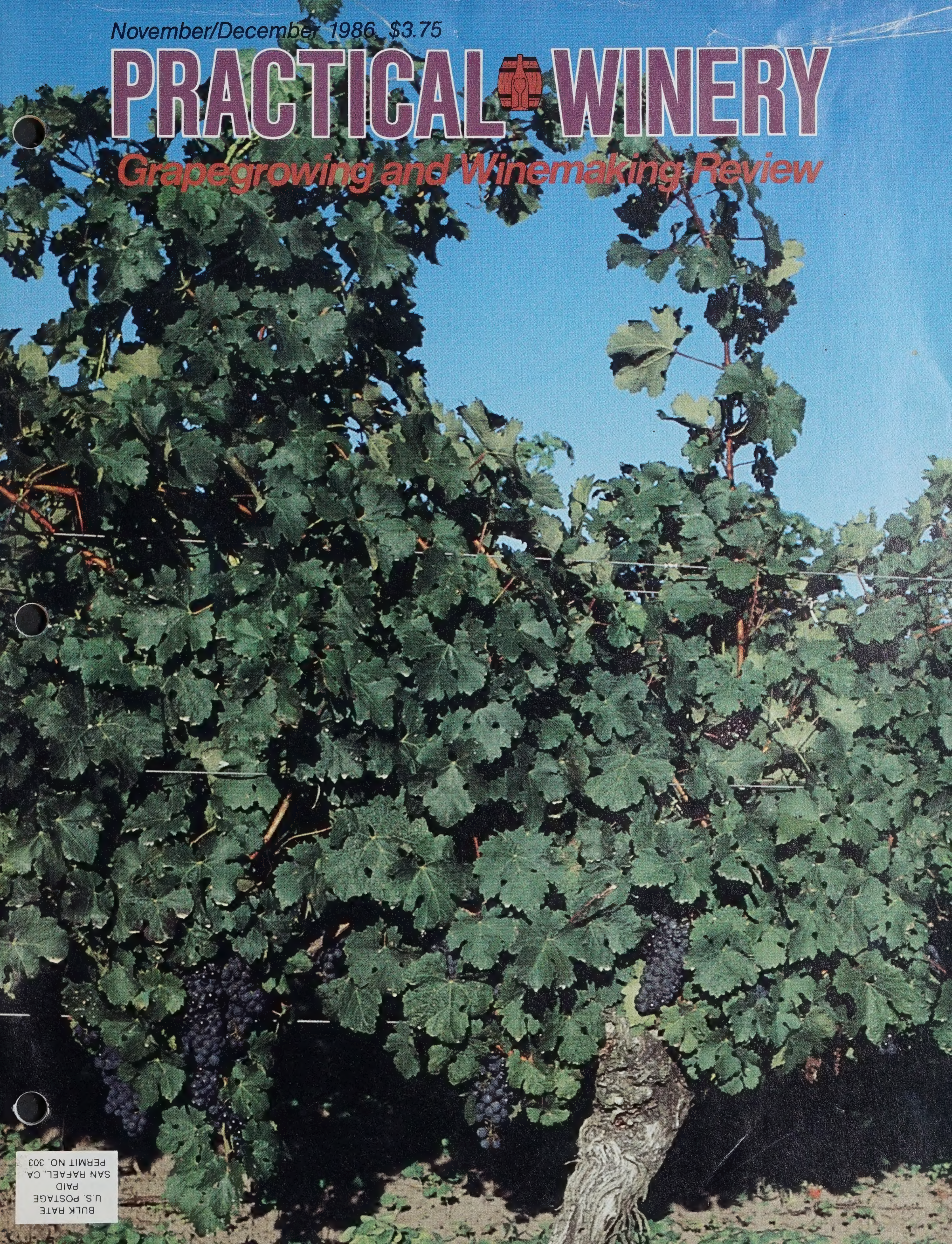
PRACTICAL WINERY

Grapegrowing and Winemaking Review



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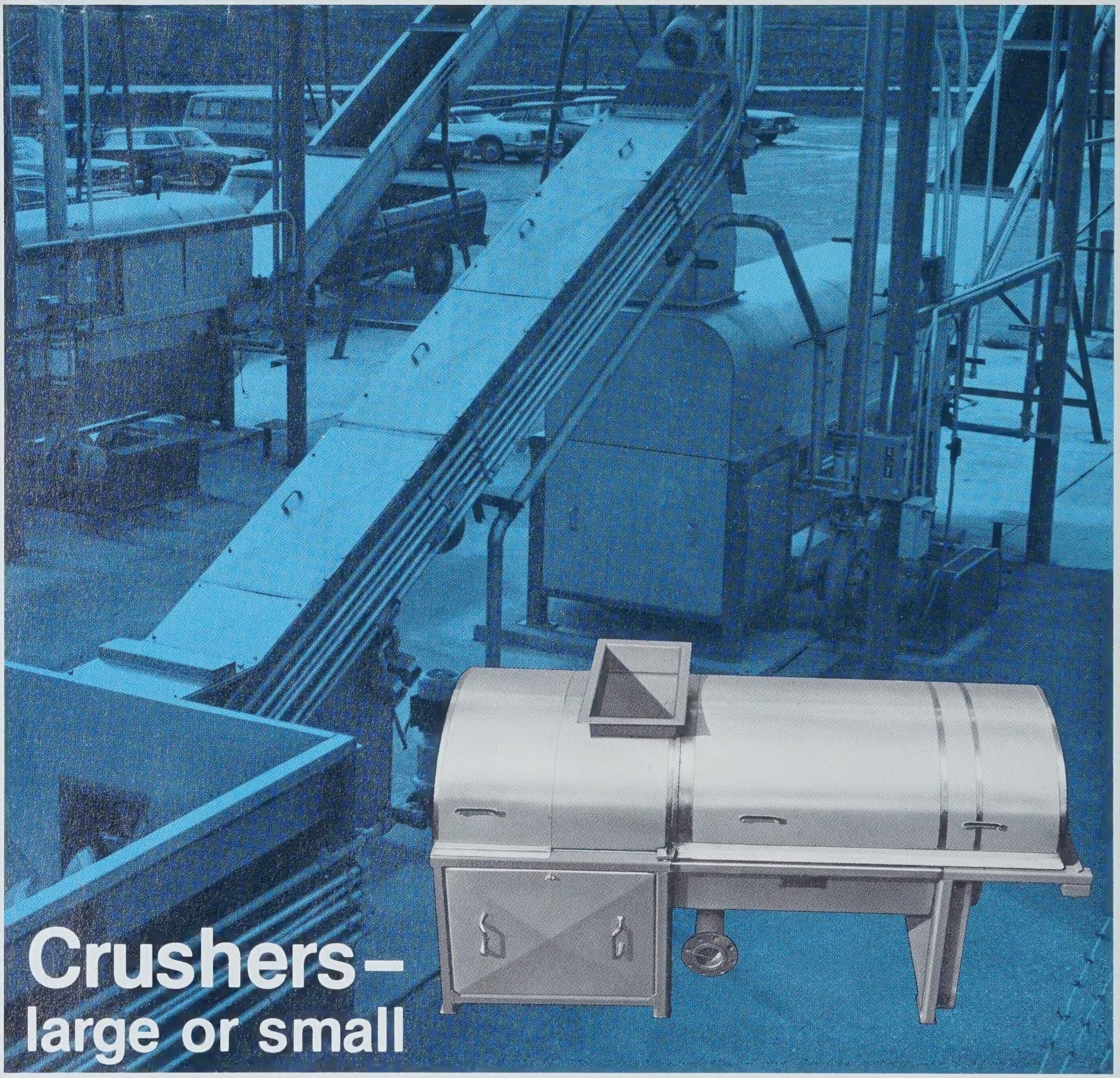

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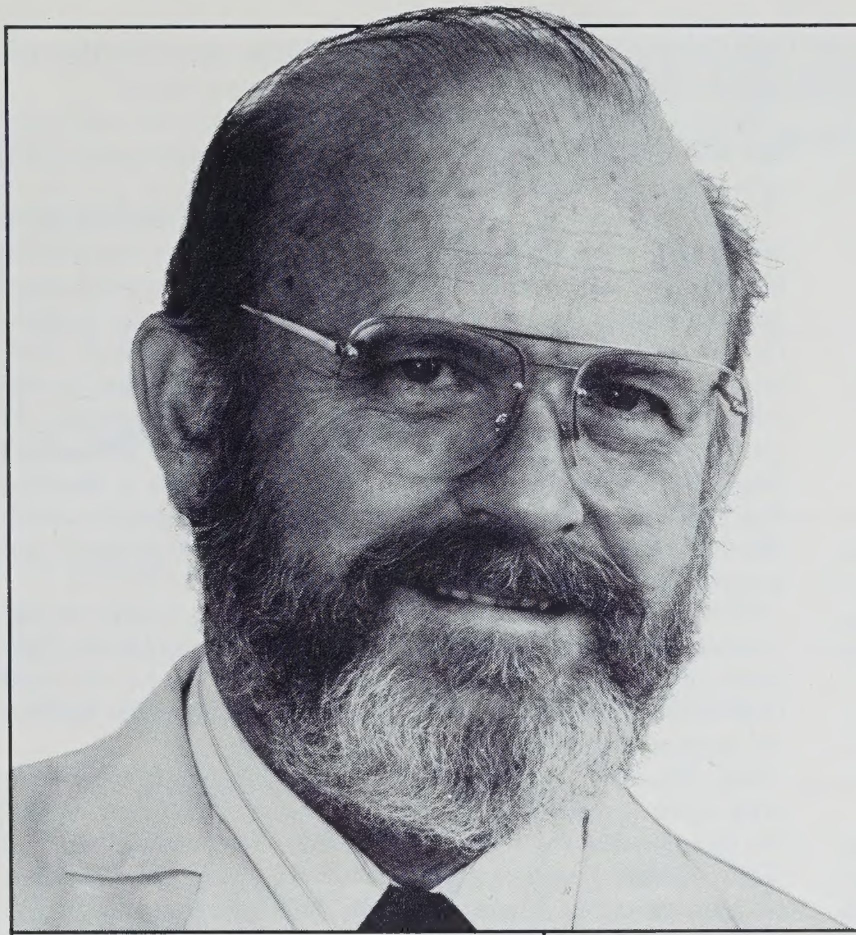

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Diane Mayfield

Habla Espanol, Anyone?

It's been nearly a year since Jake Lorenzo established the Marcelo Hernandez Honorary Chair to raise funds for bilingual information for Spanish-speaking members of the wine and viticulture industries. In case you've forgotten, or have misplaced your January/February 1986 *PW*, Jake wrote:

"A couple of years ago in these pages, I wrote that the industry should provide technical winemaking and viticultural information in Spanish to facilitate the education and development of Spanish-speaking members of the industry.

"It's time to do so. We are calling for funding for the Marcelo Hernandez Honorary Chair for bilingual information. We anticipate making a series of bilingual video tapes that will be made available to anyone in the wine industry. We will also produce a series of bilingual pamphlets.

"These tapes and pamphlets will cover viticultural practices with emphasis on vineyard theory, growth and pests. They will also explain basic enology techniques, use of equipment and varietal information. Emphasis will be placed on the connection between vine and wine from grape to glass."

We all know that Jake Lorenzo can be a wild and crazy guy. But this time he's dead serious. The fund is established and is growing larger with each contribution.

Some wineries are even making their own contribution to bilingual materials for employees. Clos du Bois, for instance, in Healdsburg, CA, recently began publishing a monthly company newsletter called 'The Wine Press', a four-page publication presenting winery news in English and in Spanish, both languages receiving two pages each. 'The Wine Press' is distributed to 21 permanent Spanish-speaking employees, 50 part-time Spanish-speaking employees, and 40 permanent English-speaking employees. While Clos du Bois is funding this project itself, it is an example of the type of thing for which Marcelo Hernandez Honorary Chair funds might be used, and is certainly a big step in the right direction.

PW has decided to make its own contribution, based on Jake Lorenzo's Modest Proposal. Briefly, Jake Lorenzo's Modest Proposal suggests that wineries make contributions for the fund from money saved by *not* taking wine writers or sales reps out for expensive meals.

Well. It's a tradition here at *PW* to treat Jake to a fancy dinner once a year in return for all the good humor he's given us. But we thought that the Marcelo Hernandez Honorary Chair and Jake's Modest Proposal were such good ideas that instead of taking Jake out to dinner this year, we'll take that money and contribute it to the fund. We're sure that Jake will be pleased.

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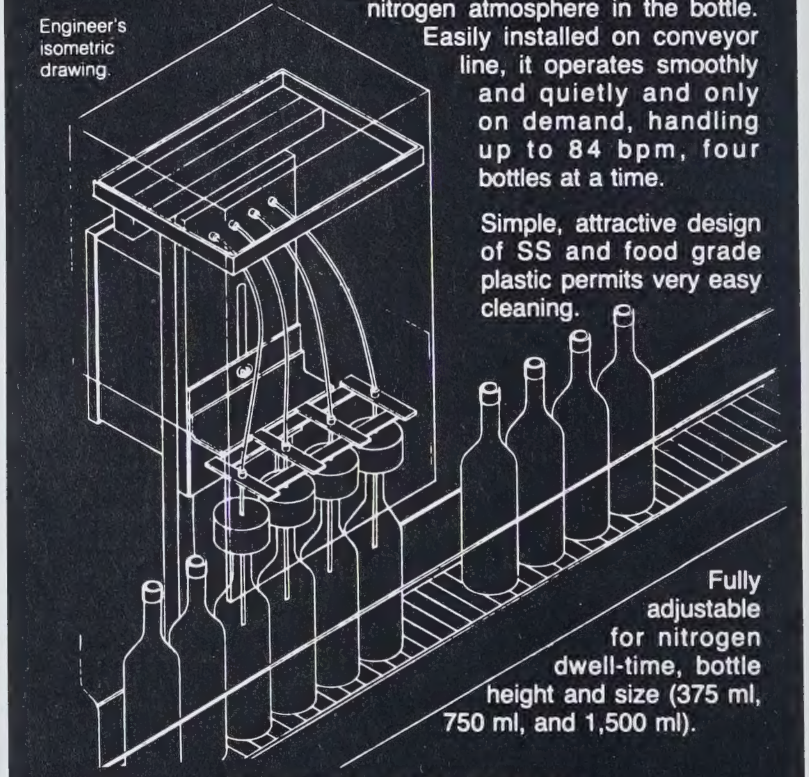

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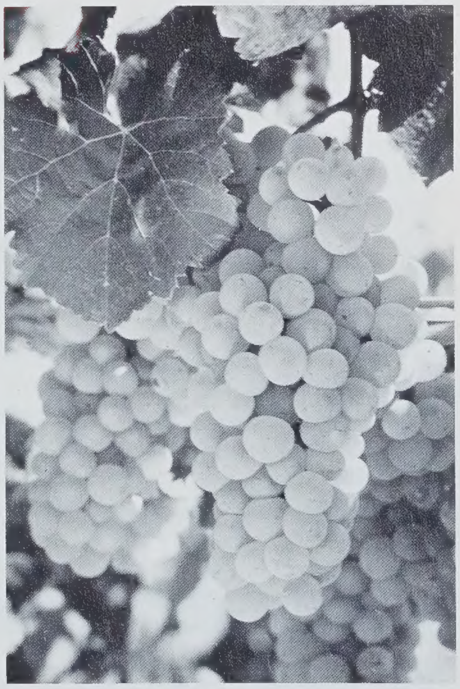
New Zealand Winemaking
See page 28.



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See page 39.
Photo by Fred Lyon

Cover:
Cabernet Sauvignon on New Zealand vertical trellis. *Photo by Paul Mooney*

"Wine is the only pleasure known to me that is neither illegal, immoral, nor fattening; although the world is full of unfortunates who think it is all three." Herbert M. Baus

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LETTERS TO THE EDITOR

Dear Editor:

I enjoyed Stan Hock's column concerning wine advertising (*PW* Sept./Oct. 1986). A couple of thoughts came to mind.

Too much wine advertising focuses on wine being a beverage for special occasions. There are 365 days in the year but birthdays roll around on just one of those days. Anniversaries happen once a year. Why don't the Winegrowers of California spend their money encouraging people to drink wine (California, of course) more frequently?

Here's a few things they oughta do: Advertise on Monday Night Football. Advertise on soap operas. Advertise on game shows. Advertise in People Magazine. Show a bunch of people having a picnic and a bottle of wine. Show a bunch of folks having a backyard barbecue, burgers and a bottle of wine. Howza 'bout an ad showing a couple sending out for pizza and opening a bottle of wine? Let's see some people opening a steaming hot bucket of fried chicken and enjoying a bottle of wine.

The problem is that wine is too complicated for the average consumer. It's always gonna be too complicated for the average consumer. And the average consumer isn't going to study wine at great length because wine is 'just a beverage'. And it's a beverage with a lot of 'mystique' (a.k.a. bullshit) surrounding it. So, spending big bucks to educate him ain't gonna work. And wineries spend money advertising how many awards their wines have won or how special their wines are.

The average guy ain't gonna buy it because it's too damned special. When have you seen a TV ad for beer showing a bunch of really well-dressed, bejewelled people lifting a mug (or bottle) at a wedding, anniversary or birthday? Beer ads don't focus on 'taste', they focus on people having a good time. People want to have fun. And how many wine ads show anybody having a good time?

Keep up the good work. I enjoy PRACTICAL WINERY.

Grapefully [sic] yours,
Gerald Weisl
'The Fastest Glass in the West'
Weimax Wines & Spirits, Burlingame, CA

Dear Editor:

Jake Lorenzo is correct; humor is essential in the business of private investigation. And, as he points out so eloquently, it works in T.V. advertising, too.

Jake, your call to the big boys about making riches beyond their wildest dreams is valid, but not unique. Riunite and Cella have been for years telling the American consumer that wine is fun. True, it is not the kind of wine you or I may want to have the consumer drinking, but the point is, they have done it and it works.

The question you bring to mind is: why haven't the great wineries with large ad budgets even considered following that lead? Wish I knew the answer to that.

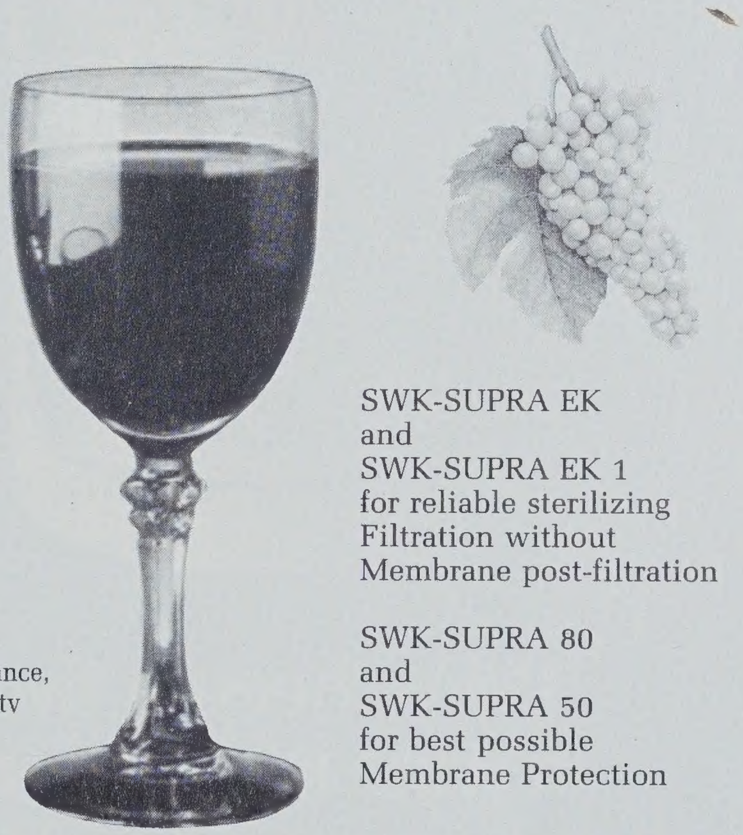
In our small winery outlet near Hammondsport, NY, we hear customers everyday who want to drink more wine but are afraid of their ignorance and the price. The perception they have is that it is a product for those who have been taught to drink it, and for those who have the bucks. This perception doesn't just happen; it is nurtured by wine writers, producers, snobs, and so on . . . . When are we going to learn what the Italians already know? Americans will do what they are told to do.

Sincerely,
Thomas Pellechia, owner
Cana Vineyards, Hammondsport, NY

Dear Editor:

I've enjoyed Mr. Houchins' column on wine law for some time, but I believe his article, 'Does Wine Law Serve the Consumer?' (*PW* July/August 1986) contains an important factual error on wine labeling.

On page 29, in discussing the use of the term 'made by', Houchins implies that a producer can use the word on a label even if he did not produce any of the wine. A 1974 advisory ruling by BATF on section 4.35 indicates that 'made by' may be used in one of two cases: first, if the winery produced through fermentation not less than 10% of the wine; second, if the winery treated the wine in such a way as to change the wine type. Ten percent may not seem like much, but I would hate to be the



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winemaker responsible for explaining mislabeling to a BATF inspector performing a product integrity audit.

Words that might be used for a wine containing no wine produced by the bottling winery might include 'vinted and bottled by' (since 'vinted' has no legal definition) or 'cellared and bottled by', assuming that some sort of cellar treatment was performed on the wine in question.

Sincerely,
Jim Lapsley, Program Specialist
University Extension, University of California, Davis

Dear Editor:

I am indebted to Jim Lapsley for pointing out an issue raised by my speech on consumer protection aspects of labeling laws, recycled in *PW* July/August 1986.

The subject was a fictitious bottling name used by a hypothetical conglomerate corporation to create the impression of a small, independent winery. I referred with some admiration to a winery that could make wine without existing outside the minds of the marketing department and put the percentage of wine in the bottle made by the eponymous mirage at zero. Mr. Lapsley correctly points out that as BATF sees it, a permit holder may not merely fine and filter wine that was bulked in and claim on the label it had 'made' it.

The point, from the consumer protection angle, is that any requirement that the bottler vinify (or fortify or subject to secondary fermentation, etc.) a wine is merely a BATF policy, not a labeling law, and applies (in its wisdom) to only 10% of the volume. As Mr. Lapsley notes, that "may not seem like much." If Dr. Wawszkiewicz or a like-minded consumer should want to make an issue of it, I do not think that he would be laughed out of court for suggesting that a 10% policy does not adequately protect the interest of the public in truthful labeling.

From a legal standpoint, the more interesting anomaly is that zero may be good enough under Regulation 4. The reason is as follows: Under section 4.35(a)(2), if the bottler 'treated' the wine in some way other than by vinifying it or changing its class or type, it may use certain phrases set forth in the regulation.

There are only three choices for standard wine: 'blended and bottled', 'rectified and bottled', and 'made and bottled'. The regulations do not define the term 'treated', but the meaning of 'treatment' may be found in section 4.22(c). On the reasonable (one hesitating in this context to say unassailable) assumption that a wine which the bottler has subjected to a treatment—*e.g.*, with filtering equipment and/or fining agents, per section 4.22(c)(1)—has been treated by the bottler, then the bottler may use one of the three phrases, 'as the case may be'. Positing that the hypothetical winery did not blend or rectify the wine, one concludes that from a labeling standpoint it made it, a conclusion with which BATF is, in effect, in 90% agreement.

The message of the speech was that such regulations are absurd consumer protection. The message of Mr. Lapsley's letter, with which I concur, is that real wineries should not attempt to take that absurdity to its logical conclusion in their labeling.

Sincerely,
R. Corbin Houchins, Attorney-at-Law
Seattle, WA

Dear Editor:

I am writing in response to Stan Howell's article on 'Managing Vidal Blanc Grapevines' (*PW*, Sept./Oct. 1986). I have worked with Howell on various projects and find his work to be impeccable. I have also seen the complete set of data from which this paper was derived and have witnessed two oral presentations of the same, plus numerous presentations of the data through the years as the data was gathered. The data in 'Managing Vidal Blanc Grapevines' is accurate and consistent with what I saw earlier.

Now for the grower's viewpoint.

High cordon training in our climate in Michigan with large clustered varieties is expensive. I will elaborate in a moment. Stan has a habit of viewing results and drawing conclusions from a strictly academic viewpoint, that is, with no eye for the practical. Suffice it to say that he has never farmed.

Keeping in mind that my vineyards are located about as far north as Vidal can be grown, I have tried growing Vidal on high cordon and found the following:

1) Trunks suffer winter damage which *accumulates* from year to year. They must be renewed every 6–8 years, and this costs money. A cordon adds six feet of horizontal trunk to

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six feet of vertical trunk. It takes two years to establish 12 feet of trunk, which means that trunk renewal is being done one out of every three or four years, and my experience shows that each year that this goes on adds 25% to pruning costs and 100% to trunk maintenance costs.

2) There is a strong tendency for the vine to overcrop, which means that more thinning is required, adding to the thinning costs by about 30%.

3) *Older* cordons exhibit the same qualities as fruiting canes after a severe winter—reduced crop. There is some advantage from shoots arising from non-count positions, but that diminshes with cordon age.

4) We grow on medium-high head and leave extra-long canes or extra canes. At thinning time, the shoot count is set by cutting off excess cane length (and associated shoots and clusters). Then thinning of remaining shoots is done as usual.

Sincerely,
Douglas Welsch
Fenn Valley Vineyards, Fennville, MI

Dear Editor:

In reading Mr. Welsch's letter, I have noted several points which can be given a viticultural response:

1) If winter damage requires trunk renewal every 6–8 years, would a cordon system still be your choice?

The answer is no. I would train to a low or medium-high head as Mr. Welsch has.

2) Does a 30% increase in cost of cluster thinning rule out a cordon system of choice?

The answer is no. Cultural practices are investments in crop value. The important issue is return on that investment. Our data agree with Mr. Welsch's concerning increased cost of thinning cordon-trained Vidal blanc vines. Yet even an impractical academic who has never farmed can see from the data provided that yield increases more than compensate for the additional cost.

To demonstrate this, please note the table below, which compares medium-low head-trained vines (Keuka High Renewal) with high cordon-trained vines (Hudson River Umbrella). The cumulative yield over the seven years is a 13-ton advantage per acre for the high cordon and an average increase of nearly two tons/acre. Of greater practical importance is the cumulative increase in worth of the crops ($4,811/acre for seven years) and an average increase of nearly $700/acre per year for the cordon-trained vines. Importantly, this is accomplished without a vine size reduction, which means that thinned vines on the cordon were not overcropped. Clearly, the practical person would pay a bit more to thin and gain the benefit of such a return on the investment.

Further, our experience suggests an additional cost for tying head-trained vines as compared with cordon-trained vines. As a practical matter, a well-tied cordon, using a plastic attachment or a slow-degrading twine, should require minimal annual attention and replacement every 2–3 years. The cost of tying the cane-pruned system is 35–40% greater than the cordon system.

3) Cordon-trained vines do not produce canes or buds at count nodes which are superior in hardiness to those produced on a head system.

We are in agreement.

4) Production from non-count positions on cordons declines with cordon age.

Our data represent cordon-trained vines with 6- to 8-year-old cordons. There is no observed reduction in the number of non-count shoots on cordons of this age, so our data disagree with Mr. Welsch's observation.

The key issue is trunk survival. In Mr. Welsch's vineyard, the damage caused by cumulative exposure to winter cold makes cordon training unacceptable.

Fortunately, most of Michigan's Vidal blanc is less damaged by cold than Mr. Welsch's. For these more hospitable sites, I still believe the data support high cordon as the training system of choice for Vidal blanc grapevines.

Sincerely,
G. Stanley Howell
Professor of Horticulture and Viticulturist
Michigan State University

Dear Editor:

It is gratifying to see the inclusion of eastern varieties in your varietal reports, and your selection of Vidal was particularly interesting as I have been involved in a study of Pennsylvania Vidal wines. We have a tasting panel trained specifically for evaluating Vidal, that for the most part agrees with the comments made by your tasting panel.

We agree that Vidal should be drunk young, that it makes an excellent late harvest and ice wine, and that after two years the change to a vegetative character is pronounced, quite sudden and, for the most part, a negative development. Several winemakers have experimented with oak ageing and the consensus was that there are better varieties to treat in this way and that Vidal is at its best when made in a 'Germanic' style.

I should like to add some observations which may be of interest to your West Coast readers. We found a remarkable similarity between Lake Erie Vidal Blanc and Chenin Blanc grown in Washington state. The impact of the cold-climate growing conditions clearly affects the two different varieties in a similar manner.

The second interesting observation (die-hard Chardonnay lovers beware!) was that in a tasting of two-year-old barrel Chardonnay wines, an oak-aged two-year-old Vidal was thrown in as a ringer. Many panel members rated the Vidal as the best in the flight, particularly for its ageing potential.

My biased opinion is that Vidal is currently underrated and has the versatility to compete with some success with viniferas such as Chenin Blanc and Riesling. Furthermore, it may on occasion masquerade as a young Chardonnay. Since very little Vidal finds its way to the west coast, Californians should remember to take some home next time they travel back east.

Sincerely,
Mary Chisholm, chemist
Behrend College
Pennsylvania State University, Erie, PA

PROPRIETARY WINES

PW continues its survey of proprietary wines on a regular basis. The survey examines ways in which wineries are successfully marketing proprietary wines and includes descriptions of the wines.

Ste. Genevieve Vineyards

Ft. Stockton, Texas

A "whimsical marketing decision" determined the name for Ste. Genevieve's proprietary wine, Texas First Blush. First production in 1986 was 2,500 cases. The wine was designed to sell quickly in both restaurants and retail outlets through the use of point-of-sale

Influence of Training System on Cropping, Crop Yield and Crop Value of Vidal blanc Grapevines

	Training System				
Year	High Cordon Tons/Acre	Low Head Tons/Acre		Value of Crop/ton	Value of Cordon Trained Vines per acre
1977	2.11	0.73	1.38	$450	$ 621
1978	4.03	2.24	1.79	450	805
1979	6.53	3.96	2.57	450	1156
1980	7.72	5.21	2.51	350	878
1981	8.32	6.73	1.59	300	477
1982*	3.37	2.44	0.93	300	279
1983	10.23	7.85	2.38	250	595
Cumulative			13.15		4811
Average			1.88		687

* *Greatly reduced crop resulting from -19°*F temperature in January.

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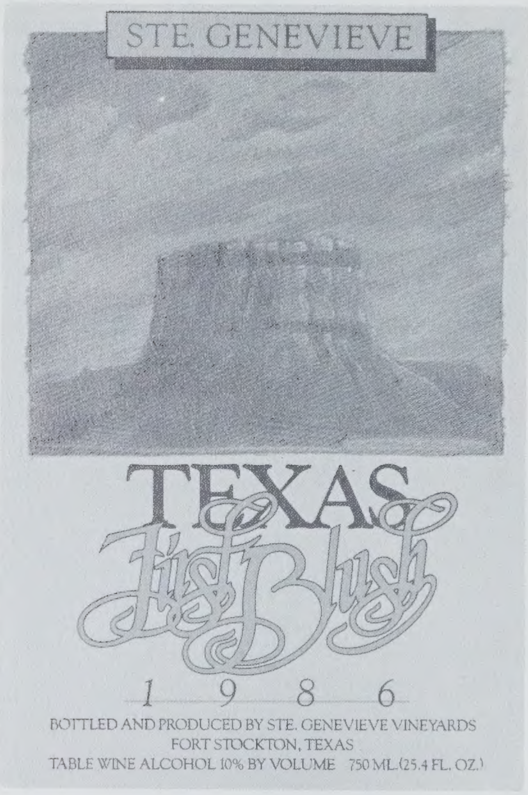
THE BOSWELL COMPANY

materials, and thus was not around long enough to become a permanent inclusion on many restaurant wine lists.

The winery will continue to produce Texas First Blush, and plans annual label design changes. Ste. Genevieve's varietal bottlings include Sauvignon Blanc, Barbera, Chenin Blanc, French Colombard, and Ruby Cabernet.



STE. GENEVIEVE

TEXAS
First Blush
1 9 8 6

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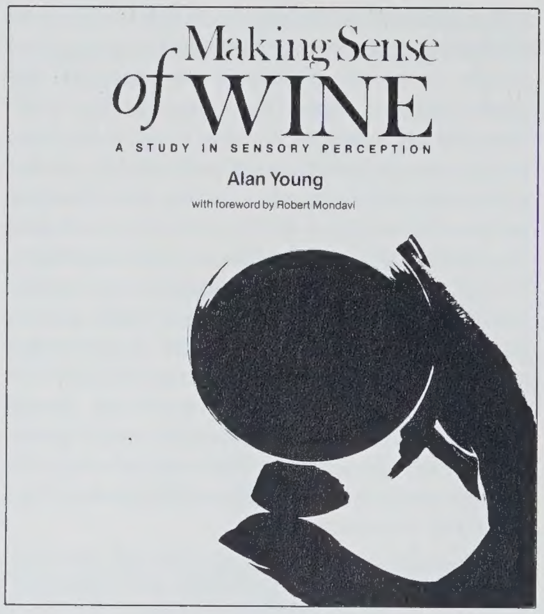
FORT STOCKTON, TEXAS
TABLE WINE ALCOHOL 10% BY VOLUME 750 ML (25.4 FL. OZ.)

Texas First Blush
Alcohol: 11.4%
Total Acidity: 0.68 g/100mL
Residual Sugar: 1.71 g/100mL
Grapes: Chenin Blanc, Ruby Cabernet
Suggested Retail Price: $3.99

BOOK REVIEWS

Making Sense of Wine—A Study in Sensory Perception
Alan Young
Greenhouse Publications; Australia; 167 pages; $19.95



Making Sense
of WINE
A STUDY IN SENSORY PERCEPTION
Alan Young
with foreword by Robert Mondavi

This could be one of the very valuable wine books of the decade for wine professionals and consumers. It is certainly not an ordinary wine book telling about wineries, vineyards or the best vintages. Rather, it is an explanation of how to understand wine color, smell, touch and taste. Because these factors are subject to individual interpretation, this book will help readers pick the wine they like rather than one some distant 'expert' recommends.

"Making Sense of Wine" is a serious discussion about the nature and role of physical senses in the evaluation of food and beverages. It suggests a continuing program of exercises for each of the senses so that the wine or food student can learn the basic fundamentals of sensory perception. The professional can better understand the most technical aspects of how, as individuals, judgments are made.

The book is entertaining, with humorous illustrations by Paul Rigby, a New York Daily News cartoonist. Much of the information has not previously appeared in any other wine book, but has been compiled from the world's most highly-regarded research institutions in the fields of sight, lighting, chemical senses, flavor and psychology.

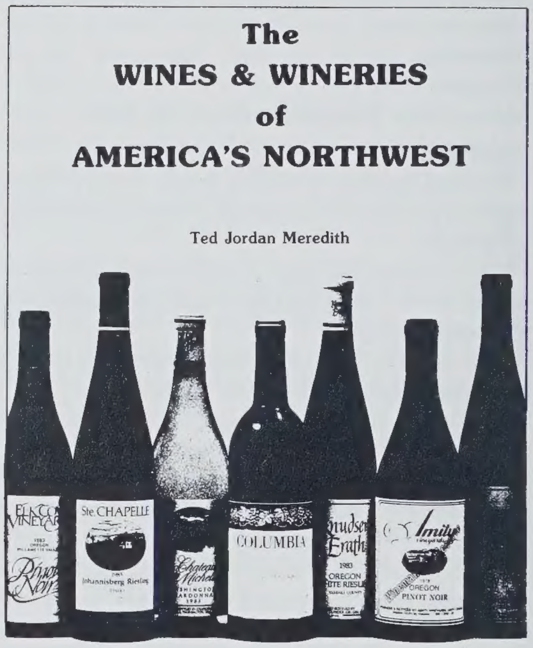
The book will help readers genuinely interested in learning:

1. How the senses perceive food and beverages;
2. How to judge wine for their own personal taste;
3. What components they really like, why, and how much.

In the foreword, Robert Mondavi writes, "Alan Young has done all of us in wine an enormous service. Wine is both simple and complex, and the more we know about it, the simpler the complexities become . . . . For the serious wine enthusiast, this book is a must. For anyone interested in wine, this book is a delight."

The book is available from *PRACTICAL WINERY*, 15 Grande Paseo, San Rafael, CA 94903 (415) 479-5819. Send check for $19.95 (no credit card orders, please).

The Wines & Wineries of America's Northwest
Ted Jordan Meredith
Nexus Press; Kirkland, WA; 224 pages; $12.95



The
WINES & WINERIES
of
AMERICA'S NORTHWEST

Ted Jordan Meredith

This is a highly-readable reference to America's northwest wine country, including over 100 wineries in Oregon, Washington, Idaho, and Montana. Comprehensive chapters describe how the land, climate, and winemaking styles combine to produce the northwest's unique wines.

Chapters for each state include its history, present and future; geographic maps; grape varieties, and winegrowing regions, including recognized viticultural areas.

This 7¾" X 10¼" format book is not for the coffee table. There are no mood color photographs, but a lot of information on each winery's direction, which is of interest to winemaker/readers unable to visit each one. This would also be an excellent reference book for brokers and distributors who represent particular wineries but have yet to make a personal visit.

Some of the larger wineries such as Columbia and Chateau Ste. Michelle receive extensive coverage. Smaller producers receive proportionate coverage—all with very little winewriter hype.

This book can be ordered from Nexus Press, P.O. Box 911, Kirkland, WA 98083 for $12.95 plus $1.25 for shipping.

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In The Cellar

Jake Lorenzo

Editor's note: On the road . . . from Chaucer to Kerouac, writers have extolled the combined virtues of wine and travel. The two are as inseparable as fruitflies and grape must. Whether swapping stories with newfound friends in faraway places or trying to keep warm while making friends with the bum sharing the freight car you just hopped, wine is an integral part of the experience. Warm and romantic, it eases camaraderie among strangers . . . I think I'm ready for a vacation.

The early morning fog sticks like cotton candy to the Sonoma Hills. Birds squawk and chirp and nest. A hot air balloon drifts silently above the fog. The morning is crisp, but promises a beautiful, warm day. Just returned from two wonderful weeks on the road with friends, and this vision of Sonoma Valley reminds me how fortunate I am to call this home.

The serene morning is propitious, for today I announce my new career: Jake Lorenzo, disc jockey. It has a nice ring to it, a certain melodic charm.

Technology is a wonderful beast when it heeds its master. Technology gives us whole careers, allows us to create whole personas. A couple of stereo components, a few records and tapes, and whole new vistas present themselves. That's right—when I'm tired of being Jake Lorenzo, private eye, when I can't stand one more hour on a stake-out, when I can't take one more grainy polaroid of some person cheating on their spouse, when I realize I can't stand the person who lives in the body I'm guarding, I go home and dee jay.

Jake Lorenzo, disc jockey, has just spent the last three days sipping Pinot Noirs with piles of African records strewn about the house compiling the latest in a series of classic tapes. 'Jake Lorenzo's African Beat' is easily one of the best and may even rival the legendary 'Jake Lorenzo's Songs to Drink By'. (This latter tape runs a full 90 minutes and contains 29 songs from 1940—1965, each of which is about drinking some type of alcoholic beverage.)

Travel, they say, broadens the mind. In my case, it created a whole new persona, Jake Lorenzo, disc jockey. I relate this to travel, because the idea came to me during a tour with the Sonoma Valley Wine Patrol. The Wine Patrol is the brainchild of several good friends, one of them a world-famous winemaker.

The idea for a national tour came to him while he was working on the road. Well, he calls it working, but as he has so often explained late at night over a last shot of Hornitos, "Working in the wine business is basically drinking fine wines with your friends."

He had made friends all across the country, and the tour was a way to get them all together to meet one another. He chartered a plane, and 22 members of the Sonoma Valley Wine Patrol, including yours truly, climbed aboard. We headed for Seattle, Denver, Charlotte, New Orleans, and then back to Sonoma for the final blow-it-all-out pig roast. Not only did we get to meet the 22 crazies on the plane (you're either on the plane or you're off the plane), but at each stop another 20 or 30 Wine Patrollers would put us up, show us around, and introduce us to their town.

We went fishing in Seattle, skied in Colorado, barbecued in Carolina, and crawfished in New Orleans. Everywhere we went, we ate fabulous food, drank fantastic wine, sang songs and danced all night long. Everywhere we went, people took us into their homes, opened their hearts and shared their lives.

Memories flood the mind: mountains of oysters in Seattle, drinking Sonoma Valley's finest out of bota bags on the ski lifts, dancing at Jonathan's in Charlotte while the whole audience chanted our theme song, "We reserve the right to party each and every night. . ." (Freaky Executives), and the crawfish grease dripping down our arms as we pinched tails and sucked heads in New Orleans.

I was proud and thrilled to have the 22 Patrollers here in Sonoma to meet my friends, to see our valley and town, to eat Sonoma French bread and Sonoma sausage, to have an Anchor Steam on tap in the Sonoma Hotel and a Ghalarify at the Swiss Hotel, and to finish the evening with tequila in Steiners.

We made friends everywhere we went. We saw towns and cities as only a native can show them. Everywhere we went, the focus was on Sonoma Valley and the great wines produced by the wineries lucky enough to call it home. A message was sent across the country: Sonoma Valley's wines are fine and drinking them is friendly and fun.

More than anything, I was made aware of something that we often forget. The wine business is a people business. Wine is a magical product that helps forge human relationships and cements long-lasting friendships. We often get too wrapped up in the numbers and the medals and the reviews. We must remember that it is the people who sell, the people who buy, and the people who drink our wines that allow us to live the way we do.

We need to be reminded of the pleasure our wines bring to people in other cities. We need to see and feel the palpable connection they feel with us and our product. We need to foster that warm connection, to welcome them here whenever they can make the trip and to take as much of our spirit and enthusiasm there when we visit them. We need to demystify and informalize the whole wine business, because the people who support us the most are just plain folks.

Music is primordial. The beating of the drums speaks to our hearts. The melodies lock onto our souls. Jake Lorenzo, disc jockey, has the power to beat the drums and lock the melodies into love poems, thanks to the friends on the road.

I hope some day each and every one of you is on the plane, but in the meantime, take the flight yourself. Sound the news. The Wine Patrol is on the way and we will have a wine holiday.

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The Wine Retailer

Stan Hock

Bigger Is Not Better

Karl Marx would love it. The wholesale end of the American wine and spirits industry is beginning to resemble an advertisement for the theory of monopoly capital. Those small and medium-sized wholesalers who aren't folding up their tents are happily selling out to giant houses whose 'books' are bulking up to the size of *War and Peace*.

You want single-malt scotches? You want boutique wineries? You want imported beers and 14 varieties of wine cooler? No problem, they're all available from Amalgamated Booze, Inc., whose gargantuan, fully-computerized warehouse spews forth more brands of wine, beer and liquor than you ever knew existed.

While big-bucks domination of wine and spirits distributing is increasingly prevalent in metropolitan areas throughout the country, the ominous trend toward wholesaler consolidation is most advanced in California. Particularly in the San Francisco Bay area, smaller houses have been dropping like flies, leaving behind a handful of behemoths to butt their corporate heads over the shrinking pie of beverage alcohol sales.

Reasons for the shakeout are fairly clear. Abolition of fair trade paved the way for supermarket and discount liquor chains to enter the retail alcohol business (two-thirds of all alcoholic beverages are sold in such outlets in California), and their tremendous buying power has forced wholesalers into a rigorous competition that has eroded everyone's profit margins.

In addition, consumption of alcoholic beverages—with the notable exception of coolers—has declined markedly in recent years, shrinking retail markets and reducing absolute volume of sales. At the same time, wholesalers' costs have risen dramatically. The big houses can weather this situation, because they have the ability to add new brands without dramatically increasing their overhead—thus boosting profit—but those operations that are too small or poorly capitalized to achieve efficient economies of scale have not been able to remain competitive.

Not surprisingly, independent retailers fear that wholesaler consolidation will lead inevitably to higher prices as suppliers are encouraged to establish exclusive relationships with powerful distributors.

In addition, wine merchants are concerned about the effect consolidation will have on the marketing and sale of California's finest premium wines. In fact, this concern has been building for years and is shared by the proprietors of many small and medium-sized wineries who find themselves caught between the rock of eternally insufficient cash flow and the hard place of having to sell their wines through giant liquor houses.

To dramatize how current market conditions have disrupted the natural alliance of the specialty wine retailer and the small wine producer, I'd like to relate a cautionary tale that is only part fable.

Once Upon A Time

There once was a small wine shop in Berkeley, CA, called New Wave Wines. This store was well-known among Bay Area oenophiles because its inventory consisted of the best and most obscure of California's 'boutique' wines. The two partners of New Wave Wines, Johnny and Rick, were so committed to promoting new, tiny wineries that it was not unusual for them to gain *de facto* 'exclusives' in their area on the esoteric wines they discovered.

For example, in the late 1970s, New Wave Wines enjoyed particular success with the products of a little-known Napa winery called Lotus Creek. Lotus Creek's proprietor/winemaker, Bill Birdseed—who by trade was a disc jockey—made Cabernet Sauvignons, Zinfandels, and Pinot Noirs that were the equal of any in the Napa Valley, but because no one except New Wave Wines promoted them, they cost half the price of wines that weren't nearly as good.

Johnny and Rick were regular visitors to Bill Birdseed's cramped little winery, which was located behind his modest home on a hillside in Napa. During these sometimes raucous visits, they would taste all the different wines Bill had in tank and barrel and quiz him carefully on his grape sources and methods of production.

They advised Bill on how to price his wines—often urging him, against their own interests, to charge more for them—and even helped him to open new accounts in other specialty wine shops they respected. In short, the New Wave partners were missionaries for Lotus Creek wines.

By the early 1980s, Birdseed had increased production from 2,000 cases/year to about 5,000 cases. At that point, he felt he could no longer make, market and deliver his wines all by himself, so he hired a broker. The broker, a competent fellow well-liked in the wine trade, did a good job for Lotus Creek. He placed the wines in many fine wine shops in the Bay Area and even did some of the marketing work Bill never had time for. As a result, important wine writers began to take notice of the Lotus Creek label, and the wines also started to win medals at the more prestigious competitions. Suddenly, Lotus Creek wines were 'hot'.

Flushed with this newfound success, Birdseed doubled his production, but soon discovered that the costs involved in producing 10,000 cases of wine were more than double what they were for 5,000 cases. He had to buy new fermenting tanks and cooperage, was forced to hire an assistant winemaker and a bookkeeper and had big payments to make on the loans that made these acquisitions possible. (A sudden industry-wide slump in wine sales only exacerbated his burden.)

The broker, who was energetic and effective in building the Lotus Creek brand, simply was not capable of selling as much wine as quickly as Bill's new financial situation demanded. So Birdseed took a step he would never have thought possible—he signed up with a big distributor, Northern Consolidated.

Now, the advantages of having a major wholesaler sell his wines were many. First of all, the distributor agreed to buy a minimum of 300 cases of Lotus Creek wines each month and pay for them promptly, an arrangement the cash-poor Bill experienced as manna from heaven. Second, this distributor had 6,000 accounts in northern California alone, and Bill visualized Lotus Creek wines adorning the shelves of every mom-and-pop grocery store from Monterey to Mendocino.

Things were fine with Northern for a while, but events occurred which made Bill question his big move. First, he made a presentation of some new wines at a company sales meeting. From the blank stares and idiotic questions he received from the 60-odd salespeople in attendance—by training and disposition mostly liquor salesmen—Bill deduced that perhaps four of them could distinguish Cabernet Sauvignon from Welch's grape juice. This shouldn't have shocked him so, but it did.

A few days later, while buying beer in his local Booze Land, Bill was chagrined to see a floorstack of Lotus Creek 1982 Pinot Noir, an excellent wine which he'd priced at $10, selling for $5.99. How was this possible? Bill immediately called Northern's sales manager for an explanation and was told that Booze Land had purchased several hundred cases of the wine and, in return, had received 'a big price break' on it. The sales manager admitted that Northern was having difficulty 'moving' Lotus Creek Pinot Noir and thus had seized the opportunity to 'dump' some of it. "But it's not a $6 wine," Bill lamented feebly in response.

A week later, Birdseed made an unannounced visit to his friends at New Wave Wines, whom he hadn't seen for months. Johnny and Rick seemed a little distant, but the three of them chatted amiably for a while about family, mutual friends and sports. Finally, after a spin through the aisles, Bill realized with a shock that there were no Lotus Creek wines on the shelves.

Johnny and Rick quickly explained, somewhat abashedly, that they hadn't had an opportunity to try Bill's latest releases, because he was impossible to get hold of anymore and because the Northern sales rep never brought samples. They also mentioned, with a bit of thinly-veiled resentment, that the neighboring Booze Land sold Lotus Creek wines at heavily discounted prices.

When he left the store, Bill was aghast. New Wave Wines was the best account he had ever had, and Rick and Johnny were old friends. They were easily the most conscientious wine merchants he knew and, in the old days at least, they made sure their best, most discerning customers never left the store without a bottle of Lotus Creek wine. Yet now, New Wave Wines did not have even one of his wines in stock.

Sure, Bill thought, he could walk into supermarkets, Booze Lands, or even mom-and-pop grocery stores these days and find his wines there, but was anyone buying them? Probably not, because Bill knew that these outlets rarely bought more than a case or two of such wines and almost never re-ordered them. Was there anyone in these places who could tell potential buyers how the wines were made, what foods they complemented or how long they might age? No way. Hadn't Lotus Creek in fact become just another anonymous facing on a dusty Booze Land shelf, in the eyes of the average consumer no better or worse than any other brand?

Even the financial benefit of the relationship with Northern was illusory, Bill decided, in essence just a quick fix. If Northern was already dumping Lotus Creek Pinot Noir, how long would it be before they started dumping other Lotus Creek wines, and then dropped the line altogether?

Where would that leave Lotus Creek? Many fine wine shops no longer carried the brand, either because they got poor service from Northern or because the wines were heavily discounted at nearby chain outlets (or both). As a result, the type of people who patronized these specialty shops—people with an appreciation of fine wine—were not discovering Lotus Creek wines.

In essence, Bill Birdseed was back to square one. The Lotus Creek brand was no longer unknown, but, then again, no one really cared about it, either.

The Moral of the Story

The object of this little tale is not to denigrate operations like Booze Land or Northern Consolidated, nor to glorify independent retailers like those at New Wave Wines. Rather, it is to point out the possible consequences to small producers of selling their wines through big distributors. Winery proprietors who aspire to make world-class wines, wines intended for the tables and cellars of discerning buyers, should realize that disseminating their wines through corporate channels inevitably alters the subtle chemistry of their brand identity.

In no small measure, this results from a weakening of their relations with the fine wine merchants who helped build their reputations in the first place. In an era when overproduction, foreign competition, and widespread anti-alcohol sentiment make competition for shelf space especially fierce, it's hard to argue that pressured small producers should not sell their wines to whomever wants to buy them. At the same time, however, those producers should understand that the corporate money that rescues them today cannot vouchsafe their reputations tomorrow.

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The Wine Lawyer

R. Corbin Houchins

Surviving Success

To most wineries, in a market like this, an upward sales curve would seem an unqualified blessing.

All other things being equal, indeed it is. The problem, of course, is that all other things in a growth phase are never equal to what they were before. Operating costs and capital requirements are up; available managerial time and energy per issue are down.

The result is a good news/bad news picture that requires some planning if good is to predominate.

Start Now

As any parent could tell you, the best time to plan for growth is before it occurs.

Unfortunately, conventional wisdom on timing is difficult to apply in practice. Before a winery opens its doors, it typically lacks some of the information necessary to determine target sales volume and calculate the cash needs to get there. By the time the entrepreneur has started and gets a feel for the right size, he or she is probably devoting every waking hour to survival, so a growth management plan gets put off again.

A Last-Minute Shopping List

Realistically, growth planning is likely to occur when a winery begins to perceive growing pains. Challenges and opportunities of that situation are too various and complex to lay out here in any detail. Still, it may be useful to make a checklist of items to consider. We can have a look at legal considerations pertaining to individual items in future columns.

Please note that the following does not constitute instructions for assembly of a growth plan. That process can be carried on only with reference to the specific winery involved and should include its banker as well as its accounting and legal advisers.

1. Employees:

A larger enterprise needs more management.

Typically, existing management approaches that need by hiring someone to do the tasks that require less judgment, in hopes that freeing time of the person or group that started the business will add to management capacity. That may or may not work, depending largely on the strengths of the founders. Sometimes the best course is to keep making the wine and hire a controller to reduce the management tasks to choosing among distilled alternatives.

2. Structure:

As an organization becomes larger, a higher degree of organization is required.

The legal form of organization may need attention, so that it helps the process of distributing authority and responsibility. Formal changes must certainly be considered when new people make investments. The distinction between ownership and control is fundamental, but not obvious in the context of a small, closely-knit group.

3. Personnel as a Specialized Function:

Managing the relations among people in an enterprise is a separate task with its own requirements.

People who start businesses generally handle the personnel end of it with whatever skills and traits they may happen to possess. A growing business will need personnel management skills of a high order if it is to avoid people problems. Long before a business reaches the size where a specialized personnel manger should be hired, someone has to wear that hat and should be given the authority (and, if need be, the training) to handle it as a specialized function.

4. Employment Contracts:

Whatever personnel decisions are made, issues arise as to terms of employment and possible obligations to others.

In a growth situation, where management is facing unfamiliar challenges, it is all too easy to skip the step of thinking through exactly what the mission of a new employee is and how much authority that employee will have. New sales and financial positions are notorious for being inadequately defined.

Do not attempt to take refuge in the erroneous thought that the job of sales is to cause however many cases are put on the dock to be converted into money without having any impact on what goes on inside the winery. Do not hire a financial person to make all the numbers agreeable; growth will almost always present a fair number of very disagreeable facts to the owners of a business, facts from which decisions of reasonably high quality must be made if the winery is to survive.

5. Capital:

A corollary of Murphy's Law states that the costs of growth always arrive before the revenues.

While accurate predictions of future sales are difficult in the extreme, it is a relatively simple process to project cash needs versus revenues at several assumed higher sales levels. Chances are that any realistic scenario is going to require additional capitalization, if only to bridge the gap between higher expenses and actual receipt of income.

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Essentially, you will need to borrow more, invest more or—often the soundest course—both.

(a) Lenders:

Let's hope your banker likes both the wine and the balance sheet, because he or she is probably going to have to participate with you in weakening the balance sheet, at least for an interval, in order to make way for more wine. Debt will go up, and some of the key ratios will deteriorate.

While it is essential to have your banker on the team with some personal attachment to the survival of your business, the borrower/lender relationship is at bottom an arm's-length legal one. Loan agreements are contracts and often incorporate that sincerest of promises, the secured negotiable note. Careful analysis of needs and capacity and thorough legal review are called for.

(b) Investors:

Investing more of your own money in a sole proprietorship is largely a personal and accounting matter. Investing other people's money adds serious legal issues and requires great care.

Even an outline of the issues involved in bringing in new investors would be too complex for this forum, but the broad areas to be looked at will include the following:

i. Compliance with local and federal law regarding how many and what kind of people you can talk to about investing, where they may be located, what documents you may and may not show them, etc.

ii. What voice in management you are willing to grant in order to make funds available.

iii. Contingency plans for new investors coming in, old investors going out, and all investors falling out with one another.

6. Gallonage:

Sales curves are graceful, flowing lines. Costs of increasing capacity tend to be incremental, like stairsteps.

The area under the angular plateaus of the capital needs curve and above the rising sales curve must be stuffed with money. There is thus a premium on accurate prediction of capacity needs and an incentive to find ways to minimize the effects of unpleasant surprises.

Shared production facilities and contract crushing (*PW Wine Lawyer,* May/June 1984) should be considered as an alternative to investing in more cooperage. Moving forward stepwise with someone else's equipment and operating experience can reduce the downside of a wrong guess about future sales.

If you do use contract crushing, note that the first word of that term has got to cover a lot of ground, including trade secrecy, trademarks and regulatory considerations.

7. Plant Site:

A whole new range of issues arises if you are going to need more space.

The hidden costs of physical expansion are legion, but a good accountant with experience in small manufacturing operations should be able to pencil it out for you. There will be some rather major crossroads, ranging from rent versus purchase to choosing between a tilt-up in an industrial park and a tourist-grabber tasting room. To make correct choices, you have to have a firm idea of what your business is going to be at its optimum size—which is often quite different from the business you thought you were going into.

Whatever changes occur in location and physical plant, there are going to be contractual and other issues with a full complement of legal pitfalls.

8. Risk Management:

A bigger company has more at risk.

Insurance needs are part of the growth plan. Look at product liability, premises and industrial accident liability, and (if you serve samples) dram shop liability. Shop around for rates and coverage and involve your accountant and lawyer. The right decision is going to be highly dependent on personal factors, including what you have to lose and the degree of risk you can sleep with.

9. New Lines of Business:

Take the advice of business writer Peter Drucker and ask yourself two questions constantly: What business am I in? What business should I be in?

Making wine in quantities you can sell with your own efforts in time spared from production tasks is not the same business as marketing a brand. Operating a tasting room with gift shop is not the same business as making wine.

In a growth phase, look for both opportunities and hazards in crossing over into businesses you have not carried on before. Expect a whole new set of contractual relationships, governmental regulations, and personnel needs.

10. Having Fun:

Few of us want to work forever in the crisis mode that typifies small business start-ups.

Growth plans need size objectives, both because marketing and financial considerations imply an optimum size and because human beings, even winemakers, seem to enjoy life more if there are episodes of sanity. A sensibly conservative estimate of how many management hours at full mental capacity you will happily devote to the business over the long haul is a key variable in determining the size to aim for.

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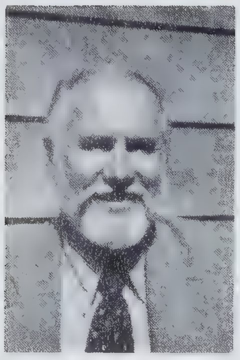

Winery Water & Waste

D.R. Storm, Ph.D., P.E.

Small Dams and Impoundments

The Natural

Shortly before I was born, my father, who was a general contractor, was working on some of California's earliest hydroelectric development projects on the Pit River. The construction included concrete and earthfill dams and power houses. But for a chance trip my mother took to San Francisco late in pregnancy, I would likely have been born at the Pit 3 construction camp. Filling in the 'place of birth' blank with Pit 3 would have been slightly less glamorous than San Francisco, CA.

My first engineering employment placed me many times on design teams for dams of all sizes and intended uses in both the U.S. and overseas. I was always comfortable with the role of dam designer, and have wondered since if there are not genetic connections and maternal experiences which give offspring inherited professional talents and interests, just as athletic skills are often passed on from parent to child. It is a fundamental truth that dams are anything *but* natural, and have both the inherent power for good and the potential for great human and environmental harm if not properly conceived.

Dams are constructed to control and regulate the flow of water. Whether the purpose of the dam is for flood control, irrigation and domestic water supply or hydroelectric power generation (or all of the above, as is the case with many so-called multi-purpose water development projects), the basic features are virtually the same. All dams must have:

a) an *outlet-works* to release stored water;

b) a *spillway* to bypass volumes of water in excess of the storage volume behind the dam;

c) a *foundation of soil or rock* upon which the dam rests;

d) a *structural element* (dam), consisting of earth, earth and rock, concrete or rock and concrete to form the impervious barrier to the natural flow of water;

e) *abutments*, which are the right and left banks where the dam structure adjoins natural ground.

For wineries, the functional purposes for dams will of necessity be quite narrow—irrigation, process water supply and aesthetic landscape feature or wastewater storage. While it is possible to 'kick-up' a small dam with a bulldozer and scant knowledge, there are good, sound reasons for getting professional help, even for very small dams. (See *PW* Vol. VII, no. 2, July/August 1986, 'Selecting Design Professionals'.)

Dam Safety

Because of the potential devastation of life and property that might accompany a dam failure, states have established a body of law (usually under the Water Code, as it is in California) to govern the safe construction and operation of privately-owned dams. While there may be slight variations in the law from state to state, so-called 'jurisdiction' is established based upon dam height or storage volume.

In California, dams are under State Dam Safety Division jurisdiction if they are 25 feet or more in structural height or store more than 25 acre-feet of water (an acre-foot is about 326,000 gallons). Dams under jurisdiction must be designed by a registered Civil Engineer and the plans must be approved by the state and construction observed by state inspectors. Dams under jurisdiction also receive periodic inspections to ensure continued structural integrity.

For California or other states in high seismic risk zones, there is a need to have dams that will withstand reasonable, seismically-induced ground accelerations and overtopping from seismically-induced reservoir waves. California Dam Safety laws were strengthened after the failure of Baldwin Hills Dam in the mid-1960s from a transverse crack that occurred as the result of a major earthquake. An earthquake design feature that evolved for earthfill dams after Baldwin Hills was known as a 'crack stopper'.

The calculation of spillway design floods is also of extreme importance in the basic design of dams. Using California again as the prototype illustration, the spillway design capacity and spillway design flood for dams under jurisdiction must be certified by the Division of Dam Safety.

Design Fundamentals

The design of dams involves a number of engineering disciplines. While civil engineering training and certification includes most all of the skills necessary to capably design a dam, specialists within the broad practice are needed to develop the design criteria and construction quality control to produce a safe and functional structure.

Site selection For dams which may be constructed as part of a winery complex, the materials of construction for economic and other reasons generally will be soils. Concrete as a construction material has been excluded from this discussion. The use of concrete for dams covers a large and special body of dam design knowledge and literature. The selection of a dam site may include the preliminary assessment of the availability of soils and the characteristics of the soils to perform as an 'engineered fill' or embankment as a first planning step.

A preliminary determination is also made of the ability of the reservoir site to contain the desired volume of water. For the preliminary site(s) selection, an engineering geologist and a civil engineer/soils specialist should be utilized. After an analysis of the preliminary site selection findings, one preferred site is selected and topographic mapping and geotechnical exploration contracted for as the next logical step.

Mapping Mapping can be done by both civil engineers and land surveyors. Civil engineers often have licensed land surveyors on their staffs to perform mapping and boundary survey tasks, although civil engineers are also licensed to perform this work.

Geotechnical survey The soil specialist and geologist (they are sometimes the same person) should set forth a field sampling and laboratory analysis program that will permit the dam designer to proceed with a rational design of the dam embankment and appurtenant structures (spillway, outlet works, etc.). Of principal importance is a 'reading' of the soil test results which must show that:

1) the soil contains sufficient clay/silt size particles to produce an impervious embankment when properly compacted;

2) the soil has sufficient strength (shear strength) to remain stable under the most severe conditions imaginable: saturation condition and/or rapid draw down and non-liquification during a seismic event.

Any and all 'capable' earthquake faults must be identified and their damage potential assessed in connection with the proposed dam. (A capable fault is one that has been active in the last 10,000 years.)

Spillway design A civil engineer with demonstrated hydrologic competence should calculate the design flood that the spillway should be capable of passing. Terms like 'maximum probable' and 'maximum possible' flood are often used to describe the rainfall event that produces the spillway design criterion.

Embankment design Of critical importance is the analysis of the dam foundation information developed in the geotechnical phase. For example, is the depth through soil to bedrock too great to allow economical excavation and replacement with competent fill material? Is the bedrock jointed or massive (no cracks)? Is it weathered or fresh? If vertically bedded and jointed, can the foundation rock be sealed with a clay blanket or must it be grouted (a process wherein cement slurry is pumped under high pressure into the rock matrix—usually for high dams with a high seepage potential)?

All of the latter design exercise is usually placed under the category 'seepage analysis' or 'will the dam hold water?' Of significant importance is the possibility of extracting the embankment material from the reservoir site. First, it is close to point of eventual use (the dam) and 'short hauls' are cheaper. Secondly, the removal of material from this reservoir location gives you one cubic yard or cubic meter more of reservoir volume for every cubic yard or cubic meter of soil that is removed.

Intake and outlet Dams under jurisdiction must usually include a valve on the upstream end (intake) and downstream end (outlet) of the outlet structure. As the outlet pipe generally passes through the dam or around the embankment through one of the abutments (the right and left banks), any leak in the pipe could eventually lead to a failure of the dam. Smaller dams with low 'heads' (pressures) do not present such a hazard and a downstream valve is often sufficient.

'How to' Books

Even though dam-building should be left to professionals, there are reference books that will help you to understand the process and to arm you with the right questions for your designers.

In California, the State Division of Dam Safety (a branch of the State Department of Water Resources) has a handbook which leads you through the steps necessary to get design approval for dams under jurisdiction. For those with a legal bent, the California State Water Code, Parts 1 and 2 of Division 3 and the California Administrative Code Subchapter 1, Chapter 2, Title 23, contain all the laws pertaining to dam design, construction and operation in California. Other states have similar codified regulations.

A second recommended reference is *The Design of Small Dams*, 2nd edition, which contains much of the accumulated design experience of the U.S. Bureau of Reclamation, and can be purchased for a nominal sum from the U.S. Superintendent of Documents. Another federal agency with an impressive list of dam design credentials is the U.S. Army Corps of Engineers. Most of their dams are in the large category and their design criteria are contained in a series of 'design circulars'.

For a quick lesson in soil mechanics, the U.S. Bureau of Reclamations' *Earth Manual*, 2nd edition, 1974, details laboratory procedures for soil testing as well as suggesting approaches to exploratory investigations prior to dam construction. Finally, the U.S. Soil Conservation Service of the U.S. Department of Agriculture, has compiled an extensive series of manuals on dam design.

Post-Dam Construction

If no agency is overseeing the performance of your existing dam, it might be prudent to have a civil engineer, who is competent in this field, make an inspection, particularly if one has never been done. Large areas of seepage, slumps in the embankment and an unexplained water loss are all symptomatic of a problem that could become worse. Losing the dam could be a major dollar loss that the winery could not stand and the interference with vineyard or winery operations could be catastrophic.

Don't try and be a do-it-yourselfer when it comes to dams. Samuel Clemens could *also* have said, "The winemaker who designs his own dam has a fool for a client."

David Storm is a consulting sanitary engineer and owner of the Winters Winery, Winters, CA.

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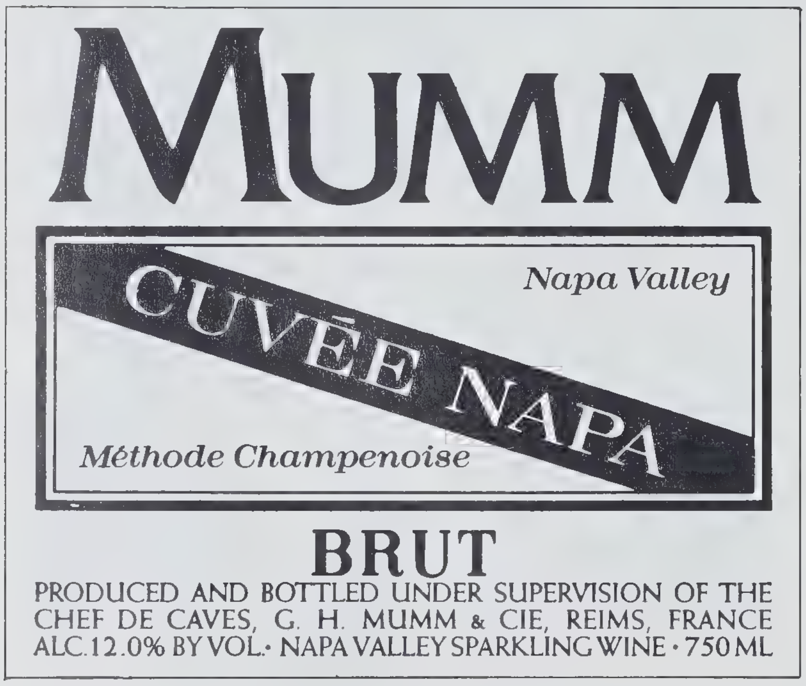
Méthode Champenoise First Releases Evaluated

Bruce Zoecklein

Many believe that méthode champenoise should have a pleasant, fruity aroma, the fragrance of flowers accompanied by the bouquet due to time spent *sur lie*—or the *goût Champenois*. Many California sparkling-wine producers strive to obtain a product with complexity which is balanced and delicate with youth. There is certainly room for stylistic freedom, as evidenced by a review of first releases in 1986.

Perhaps the most striking difference shown in the analytical profile of these new sparklers (see Table I) is the management of the phenol and malic acid content. Many in California believe that a high malic acid and low pH adds life and freshness. Others, such as Pressoir Deutz, apparently prefer the lengthening of the finish and possible increase in complexity which a malolactic fermentation may bring.


MUMM
CUVÉE NAPA
Napa Valley
Méthode Champenoise
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ALC.12.0% BY VOL.· NAPA VALLEY SPARKLING WINE · 750 ML

The Pressoir Deutz wine is composed of 40% Pinot Blanc, 30% Pinot Noir, and 30% Chardonnay. Two vintages were utilized—75% from 1983, the balance from 1984. Eighty percent of the wine underwent a malolactic fermentation. This reduction in acidity helps to account for the tasters' perception of a long finish while retaining liveliness. Partial replacement of the malic acid with lactic acid helps tone down the aggressive nature of the acidity in this wine. A malolactic fermentation increases the acetic acid, ethyl acetate, acetoin, diacetyl, and total nitrogen. This may be a contributor to the complexity of the Pressoir Deutz. The increased pH as a result of ML fermentation increases the rate of autolysis, which may have also contributed to the noted complexity and creamy richness.

This California Cuvée was produced under the direct supervision of André Lallier, Proprietaire and Chef de Caves, Champagne Deutz, Ay, France.
MAISON DEUTZ
Méthode Champenoise
Santa Barbara County Sparkling Wine

The Pressoir Deutz was the only sparkling wine reviewed which contained Pinot Blanc. This grape in California is said to be somewhat like the Chardonnay in Champagne in that it lends finesse, lightness, and flavor. It is undoubtedly a contributor to the middle body, complexity of aroma, and the finish. It will be of interest to note how the Pinot Blanc ages in comparison with the other two components in this blend.

The flavor profiles of these new releases differ considerably. There are three principal stimulations: (1) the tactile base influenced by the extract and astringent elements; (2) the perception of acidity, which depends upon the cations present, buffering capacity, alcohol, and sugar levels; and (3) the sugar taste produced mainly by the interaction of acid, alcohol, and sugar. As Table I and the taster responses indicate, there is some variation in the tactile base. Domaine Mumm, for instance, uses a fairly thin layer tank press. The result is a low phenol extraction, limited extract, and a product that is fairly light on the palate.

Pressoir Deutz, on the other hand, uses a Cocquard or traditional Champagne basket press. Such units have a shallow *maie* or press basket (about 2 feet) and a diameter of about 10 feet. The shallowness of the base relative to the width allows for fairly thin layer pressing. Two press fractions are segregated at roughly 120 gallons/ton for Chardonnay.

The Deutz total phenol content is about 100 mg/L higher than the other wines tasted. This is approximately the sensory threshold level in white wines and contributes to the taster's sense of richness and astringency. The phenols are extracted from the pulp and are individually below their sensory threshold. In low levels, they collectively contribute to both bitterness

TABLE I

Product	alcohol %	TA g/L	pH	Malic mg/L	sugar g/L	Lactic g/L	Total Phenols mg/L	Non-flavonoid Phenols mg/L
Estrella River 1982 Blanc de Blancs	11.9	8.25	2.94	2148	6.1	0.35	200	190
Maison Deutz Brut Cuvee	12.3	7.50	3.22	472	8.9	2.75	310	300
Mumm's Cuvee Napa	12.4	8.40	2.98	3229	11.3	0.02	260	255
Tonio Conti 1982 Blanc de Blancs	11.4	8.70	3.01	1988	4.9	0.50	215	205
Tonio Conti 1983 Blanc de Noirs	11.7	8.70	3.03	2046	4.8	0.55	205	200

and spiciness. These two characteristics were noted by the tasters in several of the wines.

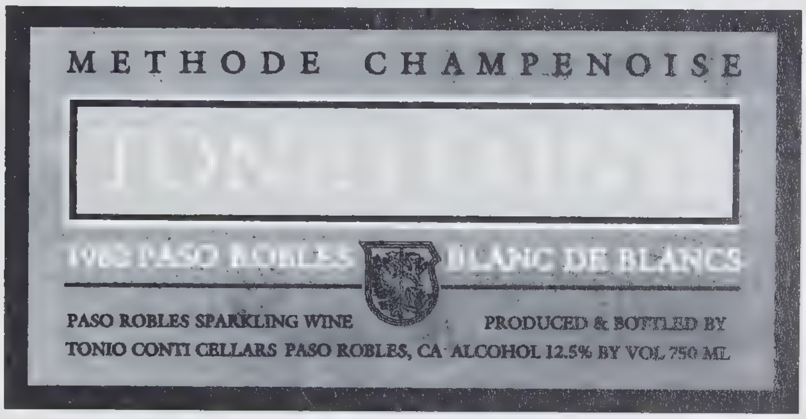
The Tonio Conti 1982 Blanc de Blancs and the Estrella River 1982 Blanc de Blancs are produced from the same Paso Robles-appellation vineyard. The Tonio Conti contains 100% Chardonnay; the Estrella River cuvée is Chardonnay blended with around 10% Chenin Blanc. The Chardonnay provides acid, finesse, perfume, and some intensity to both products. A base wine was sought that was delicate and somewhat neutral with respect to varietal aroma.

With extended maturity, Chardonnay produces a cuvée which is too varietal, assertive, perfumy, and heavy. To manage varietal intensity while avoiding green fruit characteristics and detrimentally-low pHs, high TA provides a careful balance. The Tonio Conti has a slightly low malic content and elevated pH, which helps mute the sweet-sour perception while lengthening the finish.

The Tonio Conti is produced in an oxidative style. Juice is allowed to brown prior to fermentation. During this period, some phenols are oxidized and polymerized, becoming insoluble and precipitating from solution. Such prefermentation treatment may aid in controlling the perception of bitterness.

The Tonio Conti 1983 Blanc de Noirs is 100% Pinot Noir. Little copper color was noted in this product, produced from the relatively large-berry Gamay clone. As with the Conti Blanc de Blancs, the grapes were crushed and drained. One hundred thirty-five gallons/ton were taken for the sparkling wine program. The Pinot Noir contributed some restrained estery aromas and fruity flavors. Some limited bitterness and astringency was noted, yet the product was deemed delicate.

The Domaine Mumm Brut is a blend of 1983 and 1984 cuvées with a composition of 60% Pinot Noir and 40% Chardonnay. The wine spent 18 months *sur lie*. The Chardonnay contributes some of the initial aroma intensity, with the Pinot Noir adding to the floral tone and providing structure, body, depth, and backbone. The Pinot Noir adds length to the finish and depth. The tasters noted some bitterness which was not muted by the relatively high sugar content. The product was judged to be clean and well-balanced, despite the relatively high sugar content.


METHODE CHAMPENOISE
1982 PASO ROBLES
BLANC DE BLANCS
PASO ROBLES SPARKLING WINE
PRODUCED & BOTTLED BY
TONIO CONTI CELLARS PASO ROBLES, CA ALCOHOL 12.5% BY VOL 750 ML

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168 pages. Topics: Statistics of methode champenoise production and consumption; Maturity criteria for grapes in Champagne; Site selection in Australia—comparison with French climates; Champagne and Australian approach to fruit and juice handling; Alteration of cell wall structure in yeast during autolysis; Base wine preparation; and more. Cost A$20.

Cost of the individual proceedings includes seamail postage—add A$7 for postage by Surface Air Lifted. Cheques or postal orders should be made to the order of the Australian Society of Viticulture and Oenology and sent to Christina Brooks, c/o The Australian Wine Research Institute, Private Mail Bag, Glen Osmond, SA 5064, Australia.

Tracking Wine Inventory

George Schofield

'Physical inventory' is a nasty term. Anyone who has climbed on top of stainless steel tanks to drop a plumb line into an outdoor tank during the rainy season knows how nasty. Unfortunately, completion of the counting is only one step and, in reality, a meaningless one unless detailed inventory records are reconciled with results of the counts.

From an operating viewpoint, a critical aspect in managing wine stock levels is to review thoroughly all inventories on at least a quarterly basis; monthly is recommended. Calculating and investigating differences between count tabulations and perpetual 'book' records is a key element. However, the monitoring of process losses and changes in wine classifications are important by-products.

Operating assumptions as to yield/ton and losses due to evaporation, clarification, and bottling ought to be compared against actual experience. Variances ought to be evaluated not only in gallons and historic cost, but also in terms of lost sales for irreplaceable premium wines.

Many times the perception and reality of yield losses in wineries may be remarkably different. One winery producing an outstanding Johannisberg Riesling was assuming a yield to bottling of about 155 gal/ton. In reality, however, to eliminate any trace of bitterness, essentially all press wines were being separated and blended into either Chenin Blanc or generic wine programs. The actual yield of only free-run juice was calculated to be in the range of 132 gal/ton, or about 10 cases/ton less than management's estimate.

Classification

A preliminary step to the task of tracking wine inventories is to classify wines into utilization categories which reflect intended usage. Usually, wines are initially classified shortly after the end of crush in which they are produced. By correlating tons of grapes with production volumes, wine yields can be calculated and evaluated. New wines normally can be incorporated with the inventory of prior vintage wines by November 30.

Summarizing Changes

Exhibit 1 proposes a format for reconciling bulk wine inventories on a regular periodic basis. The basic approach is to track on paper the changes in the status of wines occurring in the winery. By doing so on a regular basis for all major lots of wines, the classifications, quantities, and cost of wine inventories can be verified and reviewed.

Starting with the reconciled ending balances of the most recent prior period, the utilization of all wine during the period is summarized in columns. New production and any bulk wine purchases are shown as additions. Bottling acitivity and bulk wine sales are reductions. Blending activity involving more than any one category is also summarized, with the total of the column netting to zero.

Supporting the entry in each column, a back-up report summarizing the period's activity should be obtained from the production department concerned. For example, a detailed listing of all wines bottled during the period should be prepared by the bottling supervisor. Similarly, a summary of all blends made which affected the listed wines should be submitted by the winemaker.

Yield Losses

After summarizing all bulk wine activity for a period, a theoretical ending balance for each wine is calculated and compared to actual physical count of wine inventories. Differences representing wine 'disappearances' are shown as yield losses. Results are expressed in gallons and as percentage of opening inventory plus any additions.

Given accurate counts, the approach of rationalizing wine disappearance essentially means little can happen to the wine without detection. Hence, the periodic reconciliation process is an excellent opportunity to keep updated on overall cellar activity.

Variance Analysis

Normal evaporation losses in wineries tend to average about 0.5%/month, with some variation occurring due to seasons, locale, and winery temperature and humidity controls. Hence, the reconciliation process begins in earnest with a review of possible reasons for variances significantly in excess of 0.5% for each month in the period.

Offsetting differences in related wines are often the signs of an unreported blend. The +156 gallon variance in the 1984 Johannisberg Riesling and the −200 gallon variance in the 1985 Johannisberg Riesling indicated in Exhibit 1 typify such an example.

Losses on wines that have been bottled during the period can account for an additional 2−3% of disappearance. Accordingly, the 100-gallon or 1.9% loss on the 1984 Chenin Blanc seems reasonable. However, the 5.6% loss on the 1982 Cabernet Sauvignon may indicate a problem during bottling.

Topping of barrels frequently occurs at 2 or 3-month intervals. Wines in barrels such as the 1983 and 1984 Cabernet Sauvignon may have an irregular pattern of loss recognition. In months of topping, a loss of 1.9% may be considered normal, particularly if no losses occurred in the prior months.

Relatively large losses such as the 500 gallons of 1985 Chenin Blanc could be an indication of spillage, leakage, or some other accident in the cellars. Having flagged such a variance, the reconciler should take the notes and schedules and review the

Exhibit 1 Inventory Changes Wine Gallons Month of November 1985

	Begin. Inv. 10/31/85	New Wine Prod. or Purch.	Wine Blends	Bottling	Bulk Wine Sales	Theor. Inv. 11/30/85	Actual Inv. 11/30/85	Yield Losses	% Losses
Johannisberg Riesling 1984	4600			-4756		-156	0	156	3.4%
Johannisberg Riesling 1985		5000				5000	4800	-200	-4.0%
Chenin Blanc 1983	1000				-980	20	0	-20	-2.0%
Chenin Blanc 1984	5300			-5200		100	0	-100	-1.9%
Chenin Blanc 1985		6000				6000	5500	-500	-8.3%
Cabernet Sauvignon 1982	5000		500	-5100		400	120	-280	-5.6%
Cabernet Sauvignon 1983	5250					5250	5150	-100	-1.9%
Cabernet Sauvignon 1984	5750					5750	5750	0	0.0%
Cabernet Sauvignon 1985		7500				7500	7450	-50	-0.7%
Merlot 1983	500		-500			0	0	0	0.0%
Merlot 1984		1000				1000	990	-10	-1.0%
Merlot 1985		1500				1500	1490	-10	-0.7%
Total	**27400**	**21000**	**0**	**-15056**	**-980**	**32364**	**31250**	**-1114**	**-2.3%**

Exhibit 2 Inventory Changes Dollar Valuation Month of November 1985

	Standard Cost $/Gal.	Begin. Inv. 10/31/85	New Wine Prod. or Purch.	Wine Blends	Bottling	Bulk Wine Sales	Theor. Inv.	Actual Inv.	Yield Losses
Johannisberg Riesling 1984	$5.500	$25,300			($26,158)		($858)	$0	$858
Johannisberg Riesling 1985	$5.150	$0	$25,750				$25,750	$24,720	($1,030)
Chenin Blanc 1983	$4.500	$4,500				($4,410)	$90	$0	($90)
Chenin Blanc 1984	$4.250	$22,525			($22,100)		$425	$0	($425)
Chenin Blanc 1985	$3.750	$0	$22,500				$22,500	$20,625	($1,875)
Cabernet Sauvignon 1982	$10.900	$54,500		$6,000	($56,100)*		$4,400*	$1,320*	($3,080)
Cabernet Sauvignon 1983	$10.500	$55,125					$55,125	$54,075	($1,050)
Cabernet Sauvignon 1984	$9.750	$56,063					$56,063	$56,063	$0
Cabernet Sauvignon 1985	$9.000	$0	$67,500				$67,500	$67,050	($450)
Merlot 1983	$12.000	$6,000		($6,000)			$0	$0	$0
Merlot 1984	$11.250	$0	$11,250				$11,250	$11,137	($113)
Merlot 1985	$9.500	$0	$14,250				$14,250	$14,155	($95)
Total		**$224,013**	**$141,250**	**$0**	**($104,358)**	**($4,410)**	**$256,495**	**$249,145**	**($7,350)**

		Gals	Total $	$/Gal
* New Unit Cost of Blended 1982 Cabernet/Merlot:	Cabernet	5000	$54,500	$10.900
	Merlot	500	$6,000	$12.000
	Total	5500	$60,500	$11.000

findings with the winemaker. In this fashion, most variances can be quickly resolved and the necessary corrections made to records and planning assumptions.

The important factor is to perform the reconciliation as soon after the close of the period as possible. Inquiries about cellars' work orders which occurred several months ago often receive poor answers.

Dollar Valuation

Once the quantities have been reasonably reconciled, the matrix illustrated in Exhibit 1 should be multiplied by the unit cost of each wine to obtain dollar values in the same format. In this way, total dollar values of the bulk wines can be tracked in a parallel manner as to the gallons. Exhibit 2 is an example of the end result of such a process.

The standard unit cost of new wines can be developed using the methodology described in the two columns on the subject in *PW* July/Aug. 1985 and Nov./Dec. 1985. A year-end adjustment may be necessary if final unit costs vary significantly, but in the interim periods, the unit costs can generally be carried forward from one month to another. At the beginning of each

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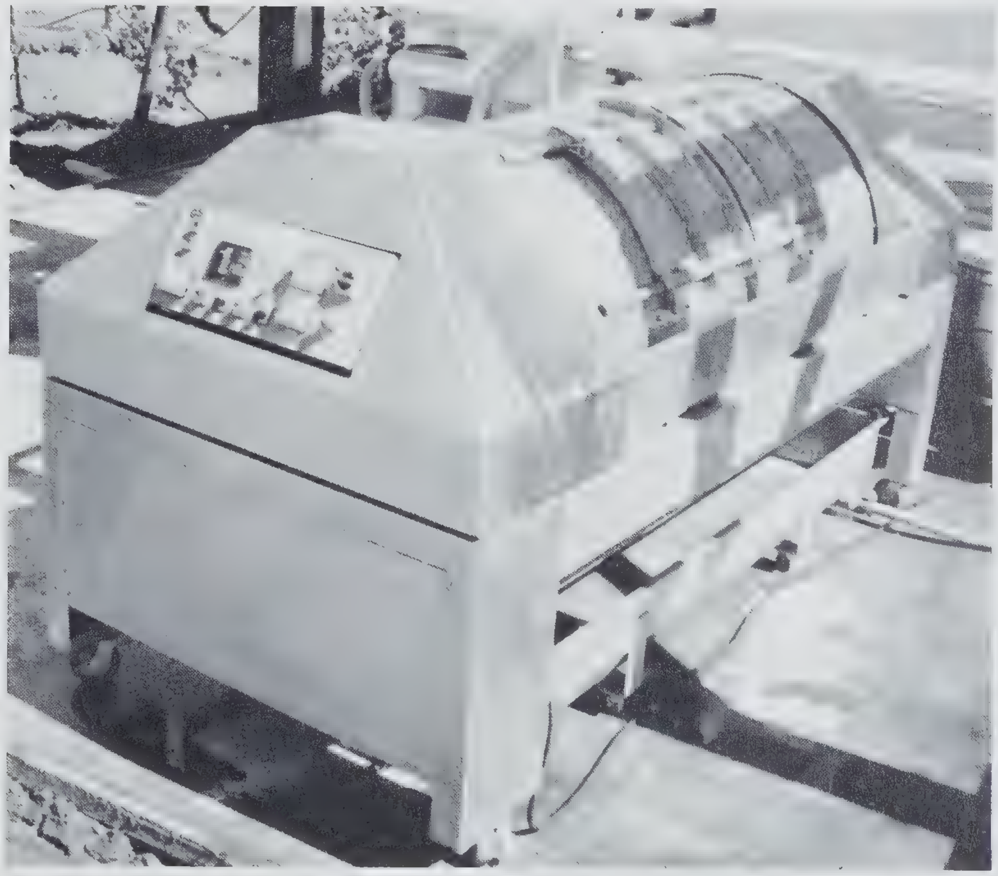

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Exhibit 3 Inventory Summary
Year to Date Movements as of Nov. 30, 1985

	Begin Inv. (gallons)	New Wine Prod. or Purch.	Wine Blends	Bottling	Bulk Wine Sales	Ending Theor. Inv.	Ending Actual Inv.	Yield Losses	% Losses
January	31490		0	-2100		29390	29300	-90	-0.3%
February	29300		0			29300	29100	-200	-0.7%
March	29100	1000	0			30100	29970	-130	-0.4%
April	29970		0			29970	29850	-120	-0.4%
May	29850		0			29850	29550	-300	-1.0%
June	29550		0			29550	29400	-150	-0.5%
July	29400		0		-1500	27900	27800	-100	-0.3%
August	27800		0			27800	27550	-250	-0.9%
September	27550		0			27550	27480	-70	-0.3%
October	27480		0			27480	27400	-80	-0.3%
November	27400	21000	0	-15056	-980	32364	31250	-1114	-2.3%
Year-To-Date Totals	**31490**	**22000**	**0**	**-17156**	**-2480**	**33854**	**31250**	**-2604**	**-4.9%**
	Dollar Valuation								
January	$263,600		$0	($25,200)		$238,400	$237,700	($700)	
February	$237,700		$0			$237,700	$236,060	($1,640)	
March	$236,060	$4,500	$0			$240,560	$239,500	($1,060	
April	$239,500		$0			$239,500	$238,500	($1,000)	
May	$238,500		$0			$238,500	$236,050	($2,450)	
June	$236,050		$0			$236,050	$234,850	($1,200)	
July	$234,850		$0		($6,750)	$228,100	$227,300	($800)	
August	$227,300		$0			$227,300	$225,240	($2,060)	
September	$225,240		$0			$225,240	$224,670	($570)	
October	$224,670		$0			$224,670	$224,013	($657)	
November	$224,013	$141,250	$0	($104,358)	($4,410)	$256,495	$249,145	($7,350)	
Year-To-Date Totals	**$263,600**	**$145,750**	**$0**	**($129,558)**	**($11,160)**	**$268,632**	**$249,145**	**($19,487)**	

year, estimated processing and ageing costs as well as a provision for expected yield losses for the year should be added to the final unit cost of the prior period.

Blend Summary

The one monthly transaction that does alter unit costs is blending of differently-valued wines. For new wines created, a weighted average cost has to be calculated based on the gallons and wine cost of each component of the blend. The blend of 1983 Merlot and 1982 Cabernet Sauvignon is illustrated in the footnote to Exhibit 2.

Data on new blends ought to be scrutinized closely. Most wineries have high quality standards. Particularly, wineries that have generic as well as premium varietal wine programs may have a tendency to make quality improvements prior to bottling by adding premium wines to generic blends. If such changes are made without considering cost parameters and planned wine utilization, the integrity of planned operating results can be jeopardized.

Yield Loss Accounting

Once the extension of dollar values is completed, the value of yield losses for the period can be recorded in the financial records. The losses in each period would be charged against the estimated reserve created at the beginning of each year as a result of the increasing of unit cost for the expected yield loss. Hence, as long as the year-to-date yield losses are close to a proration of the reserve, no adjustments to unit costs of monthly income would be necessary.

Exhibit 4 Bulk Wine Inventory Summary as of Nov. 30, 1985

	Gallons Ending Inventory 11/30/85	Standard Cost $/Gal.	Actual Inventory 11/30/85
Johannisberg Riesling 1985	4800	$5.150	$24,720
Chenin Blanc 1985	5500	$3.750	$20,625
Cabernet Sauvignon 1982	120	$11.000	$1,320
Cabernet Sauvignon 1983	5150	$10.500	$54,075
Cabernet Sauvignon 1984	5750	$9.750	$56,063
Cabernet Sauvignon 1985	7450	$9.000	$67,050
Merlot 1984	990	$11.250	$11,137
Merlot 1985	1490	$9.500	$14,155
Total	**31250**	**$7.973**	**$249,145**

Refinements

Some wineries find it useful to have a month-by-month summary of the bottom lines of Exhibits 1 and 2, which encapsulate year-to-date wine activities. Exhibit 3 illustrates such a schedule. Other refinements would include dividing bulk wines into separate groups and sheets for premium and generic wines.

One of the final results of the proposed tracking system is a listing of wines on hand at the end of each month. The list, as illustrated in Exhibit 4, would contain quantities which have been reconciled to physical counts and cellar records. The wines would be valued at 'standard costs', reflecting estimated current year costs and yield losses. The total valuation would also agree to the balances carried in the financial statements.

A similar system can be employed to track case wine inventories. The methodology is almost identical, with the column heads and reconciliation process varying slightly.

Conclusion

Considering the large percentage of capital most wineries have invested in inventories, more effort ought to be devoted to monitoring and understanding inventory status. Too many wineries go through the motions of inventory control, but ignore the basics. All wineries invariably count their inventory stocks on a regular schedule. However, tracking and investigating disappearances is the key. This last step sounds imposing, but in reality is not difficult if approached in a methodical and rational framework. With the aid of a personal computer and a 'spreadsheet' software program, the administrative chore can be reduced to a minimum and prime attention devoted to comprehending operating variances.

Winemakers' Database: Information Retrieval Simplified

James Vahl of St. Helena, CA, has created a customized computer database program for winemakers. (A database is a collection of interrelated data which is organized for ease of retrieval and update.) Appropriately titled the 'Winemaker's Database', Vahl's basic program tracks virtually every aspect of winemaking from contents of each tank and barrel to a particular wine's final blend. The program is currently in operation at four California wineries: Stag's Leap Wine Cellars, Guenoc Winery, San Martin Winery, and Glen Ellen Winery.

Stag's Leap was the first winery to utilize the Winemaker's Database. In 1985, Vahl worked with Bob Broman, former winemaster at Stag's Leap and currently at Guenoc, to implement several modifications, enhancements, and additions to adapt it to meet Broman's needs. "Bob's role was to specify what he would like to have, and he was invaluably helpful because of how much thought he put into this," states Vahl.

"We modified the original program to meet the needs of Stag's Leap," recalls Broman, "and we implemented it over eight or nine months. That program included crush weigh tags, wine movements, adjustments, additions, removals, wine analysis, barrel operations, current tank/blend status, and historical blends and analyses. It also recorded gains and losses for each wine movement or transaction, allowed entry and tracking of cost information, and could backtrack a blend to primary records, listing all intermediate transactions and historical blends."

So impressed was Broman with the flexibility of Vahl's program (and the personalized assistance that came with it) that, when he left Stag's Leap in early 1986 to become winemaker at Guenoc, he promptly installed the program there—with further modifications.

"When I moved to Guenoc, I took the basic program that Jim had developed for Stag's Leap and listed the things that were missing that would make life a lot easier if they existed. First of all, the Guenoc program is written in dBASE III+, instead of dBASE II as is the Stag's Leap program. You can do more with dBASE III+; it's a more sophisticated language with more functions, although both are databases with the ability to provide structure for organizing data in the computer.

"One of the great things about Vahl is that he'll do whatever you want him to do with the program. He won't say it can't be done; he'll just figure out a way to do it so you get the information you need. At Guenoc, one of the first things we did was determine a way to keep track of the custom crushing we do. We needed a way to track ownership—who owned the wine. So when I receive a printout, I can look for Guenoc's wines or Joe Jones' wine. We may own three tanks from vineyard X, and he may own three tanks from vineyard X, so if I ask for everything from vineyard X, it would end up showing everything, both what we own and what he owns, and I don't want that. I just want to know what I have to worry about.

"In addition to tracking ownership of custom crushes, I asked for a way to track fill date. With previous reports, I would get a listing of the tanks, but I wouldn't know if they had been filled a week, a month, or two years. I'd probably have a rough idea, but nothing specific. That's important, because if you have a young wine and want to rack it every two or three weeks, knowing the fill date helps keep track of that. This way, all I have to do is look at a report to know where everything is and how long it's been there.

"Another program addition follows yield from crush. This includes all loss from racking off lees, fermentation, racking again . . . at any time I can look back and see what the yield was before a certain operation, and it will automatically give me, right to the day of bottling, the yield at that point. This is important, because everyone talks about yield, but when is it determined? At crush? After loss from racking? After loss during barrel ageing? This way, I know what it is at each stage.

"Another area important to me is carrying the cost of the grapes. Under the Stag's Leap system, you could enter wine costs, and the cost/gal would automatically be adjusted for gains and losses. Vahl has modified the system to allow grape costs to be automatically converted into per gallon costs at the time of crushing or during the drain-and-press operation. If I take a $2,000/ton Chardonnay and blend it with a $1,000/ton Chardonnay for a 50/50 blend, the value of the resulting wine will be calculated using a grape cost of $1,500/ton, based on the yield. The accounting department always needs to know how much a wine costs—this feature helps keep track of that.

"The other thing I requested was a special system of reports for bottling. When I bottled wine in the past, the only way to find out the composition of a previous bottling was to trace back manually through a bunch of blends and find out the last time a formal blend was made. Now there is a bottling report, which means that when I tell the computer the wine is bottled and later ask for a report, it gives me a report on the composition of that tank, including the most current chemical analysis, percent by appellation, percent by vintage, percent by variety—all of the variables that go into the final blend. So if the BATF comes in and asks if this is really 75% Cabernet Sauvignon, I can show them exactly what came out of that tank. It's an absolute record, without having to write it down in two or three different places.

"Our original program at Stag's Leap tracked chemical additions to wines, like checking how much bentonite was added to

Bob Broman, winemaker at Guenoc Winery.

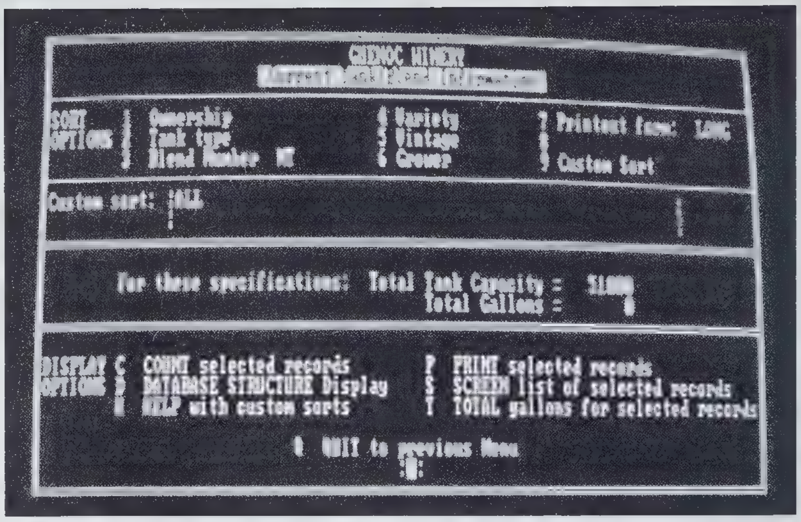
a wine. The modification carries an inventory control. For instance, when we buy 500 lbs of tartaric acid, that is entered into the computer. When 15 lbs of tartaric acid is used, it automatically subtracts it from the inventory.

"The BATF requires you to keep these records on paper. We don't have to redo them manually anymore—the computer keeps them for us and can produce a paper record at any time. I can also check on how much we have left of something, which is handy during harvest. When you're doing a lot of acid corrections and such, you don't know how much is left just by looking at it. This takes care of a lot of record-keeping, and helps us keep track of what we have.

"In fact, a real advantage of this system is that output of information is incredibly speeded up. There's no more digging through old record books—you just call up or print out what you need on the computer. From the time a tank number is entered, it takes only a couple of seconds to display the current contents and analysis on the screen. Switching between menus is almost instantaneous. The computer doesn't save time recording information. It saves time getting it out,and can deliver it in many different ways."

At Guenoc, recording of information begins when the cellar supervisor, under Broman's direction, writes work orders. Cellar workers perform the required tasks, then complete and return the work orders to the supervisor. Orders are then reviewed by Broman, after which his assistant enters data into the computer on a daily basis. Those entries are checked in reports on a weekly basis.

"Another procedure I ordered," Broman continues, "was the ability to find out how much wine we had in the winery from one block, one grower, one variety. The reason behind that is because when I would ask how much Chardonnay we had, it would take every tank specified as Chardonnay in the blend number. It did not find other wines which may have had some Chardonnay in them, such as 'Dry White', which may contain some Chardonnay, or Chenin Blanc, which might have 10% Chardonnay in it. So if I crushed Joe Jones' Chardonnay, it would be difficult to keep track of every drop of that Chardonnay during crush. We would wonder, 'Was Joe Jones' Chardonnay topped with someone else's? Did we take his Chardonnay and top somebody else's with it? Did some end up in a blend not labeled Chardonnay?'



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GUENOC WINERY
[illegible]
SORT    | Ownership          4 Variety   7 Printout form: LONG
OPTIONS | Tank type          5 Vintage   8
        | Blend Number  MT   6 Grower    9 Custom Sort
Custom sort: ALL

For these specifications: Total Tank Capacity = [illegible]
                          Total Gallons =       0

DISPLAY C  COUNT selected records       P  PRINT selected records
OPTIONS D  DATABASE STRUCTURE Display   S  SCREEN list of selected records
        H  HELP with custom sorts       T  TOTAL gallons for selected records
                  Q  QUIT to previous Menu
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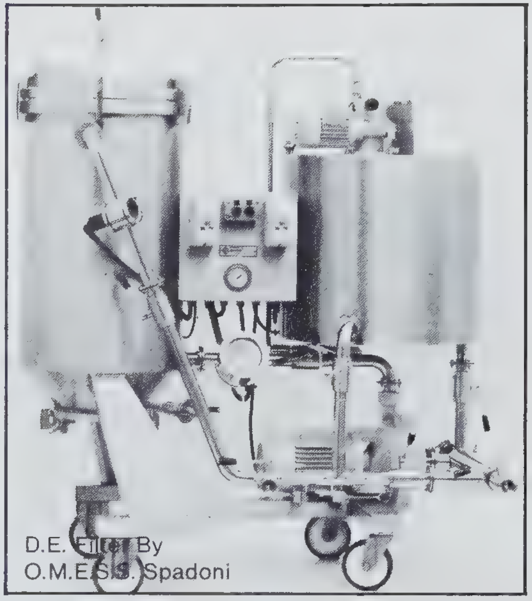

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"All I have to do now is ask the computer to list all of Joe Jones' 1985 Chardonnay. It'll show me every tank containing any of that Chardonnay, what percentage of that tank it is, and total gallons. When Joe Jones asks what his yield was, because we're paying him a certain amount per gallon, I know where it all is. It's amazing what you can do with this program. And one of the things I like best about it is that it's so easily modified to suit a particular winery's needs.

"The program is half of it. The other half is Jim Vahl. He works with you to develop the program you want until you're satisfied. And there's no additional cost for initial modifications, just the cost of the basic program. He's flexible. It's all a learning experience. With his background in winemaking and enology, he knows what our needs are. He understands the BATF and what they want. He'll fix any problems free of charge—there's a lifetime warranty. Future modifications are minimal in cost because his system is designed for flexibility—he can add what you need. It's not like some programs that are locked into more features than you can ever use, but don't have the one thing you need, so that to add it costs hundreds of dollars. Jim gives an incredible amount of support."

Personal support is something that Vahl insists on. "If a winery wants the Winemaker's Database, and it's located three hours away, I insist that they have a modem for telephone support," states Vahl. "It's part of the package. And I'll be there in person at installation and start-up."

Rick Jones, San Martin's enologist, says, "Installation and start-up of any computer system is a difficult time—there are always bugs to work out. An advantage of working with Jim is that he helps make the transition as smooth as possible; he'll stick with it until all the bugs are out. If you need further support, he's just a phone call away."

San Martin's program is the only one of the four winery installations that is multi-user—that is, more than one person can use the computer system at the same time. For example, the winemaker can make inquiries at the same time that a clerk is entering work orders or a lab technician is entering lab data. There is a special feature—a modification of Vahl's—that allows the user to type in his job title in order to get the menu necessary for that job. "This is a real advantage," says Jones, "because you can't inadvertantly access someone else's files and risk erasing important information."

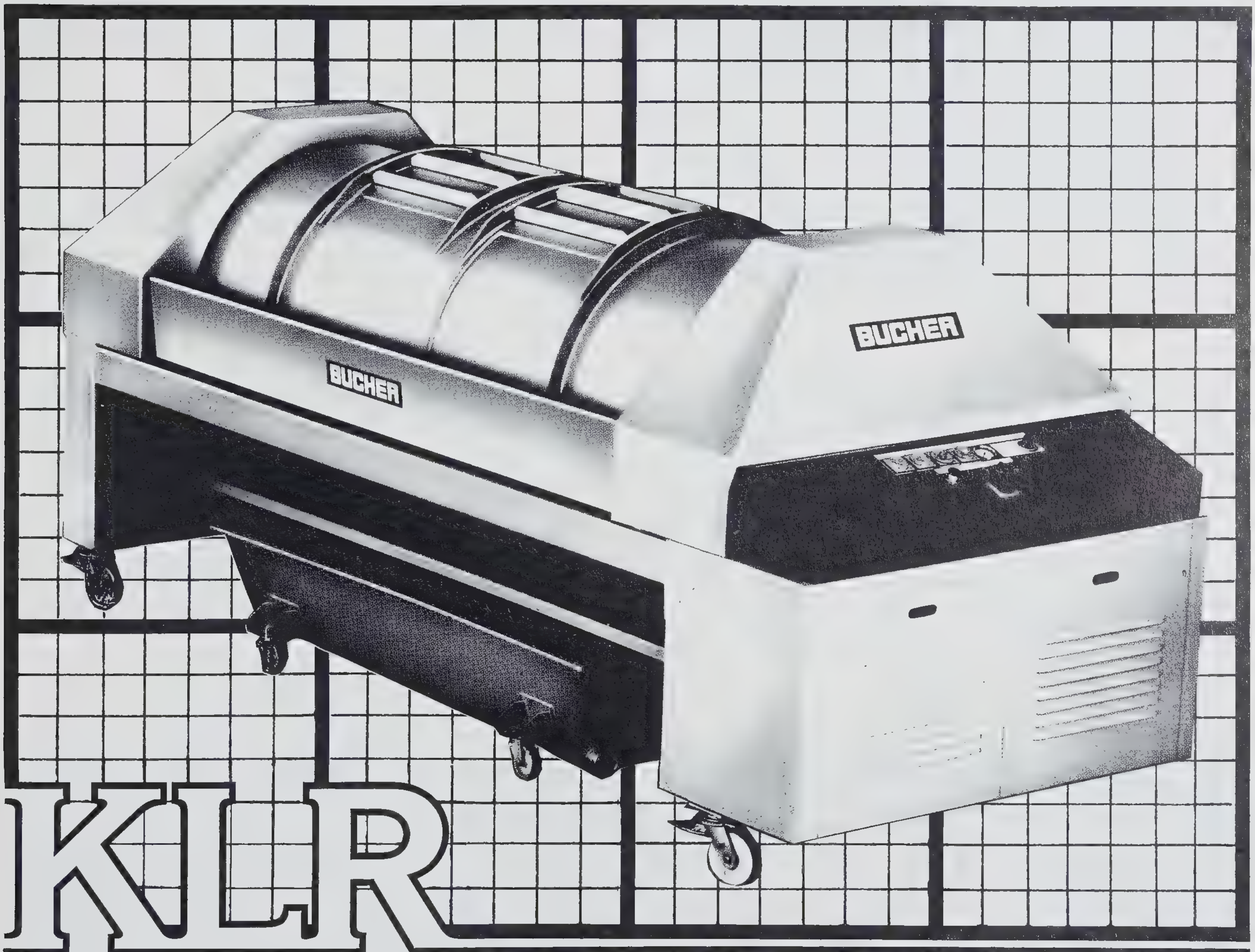
Also, because San Martin is concerned with cost analysis, the system is modified to carry both overhead costs and grape costs, rather than just a single cost figure. "The computer makes access to this type of information much quicker and easier," adds Jones. "We used to spend half an hour or more digging through records to find this information. Now we can get it in seconds."

The system is customized for individual needs at the other wineries, as well. Glen Ellen can track wine that they own or control not only at Glen Ellen, but at other storage locations. Stag's Leap, Guenoc, and San Martin have extensive barrel tracking systems included.

The basic program utilizes a 'snapshot'—that is, a record of the winery as it existed at some moment in the past. 'Snapshots' are used for government form 702 generation, and are updated every month as winemaking progresses.

Vahl explains, "In this system, in order to enter information of various sorts, you have to define codes. The system will allow you to define as many of each type as you want. If you want to define 300 different grape variety codes, you can do that. Defining all your codes—for appellations, for analyses you run, for your growers—is part of start-up. The codes can be letters or numbers or combinations of letters and numbers—each winery defines its own codes. Guenoc uses 2-letter grape variety codes, but at San Martin they were used to using 3-letter codes, so there we use 3-letter codes. Once you define your codes, information can be entered by means of them."

All programs are error-checked—that is, if an error is made, the program won't continue until it is corrected. "The pro-



BUCHER UNIPEKTIN SANOPLAST

KLR Machines, Inc.
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Bath New York 14810 • Telex: 510-252-1250

KLR Machines, Inc.
1925-B Francisco Blvd. East • (415) 456-4774
San Rafael, California 94901 • Telex: 380-753

gram is very heavily error-checked – as much as it can possibly be without being obnoxious to the user," says Vahl. "It is designed to try to prevent errors. You'll find you can't go to non-existent tanks, you can't do things that aren't legal. The machine will display a message telling what the error condition is.

"Say, for instance, that you forgot to take a 'snapshot' on the first of the month; the status of that wine has not been updated on schedule. You won't be able to enter a transaction for that month. The system forces you to take that 'snapshot'. Or if you try to define a crush tag with a tag number already in use, the computer will display a message explaining the error condition and refuse to go on until you choose a tag number not in use."

The four wineries currently using the Winemaker's Database all have different hardware. An AT&T 6300 is in place at Stag's Leap; San Martin utilizes a Novell Network with Sperry PC as the file server and Compaq portables as the work stations; Glen Ellen has an IBM XT; and Guenoc uses an IBM AT. Hardware cost is in addition to the cost of Vahl's software.

"The single-user program, including customization, costs $7,500," Vahl points out. "The multi-user program, such as San Martin's, is $11,000. I have plans for a non-customized program in order to cut down costs for smaller wineries – the price on that is tentatively set at $5,000. Users would still be able to define their own codes."

In addition, it is necessary to purchase dBASE II or dBASE III+ in order to run the customized version of the program. The non-customized version will not require dBASE. The current approximate mail-order prices are $300 for dBASE II and $400 for dBASE III+. Also, a hard disk is required. A 10-megabyte drive would be adequate for a small winery with no other large applications on the computer, but a 20-megabyte drive is highly recommended. A larger winery could require additional disk capacity. The programs will run on any computer which runs dBASE II or dBASE III+.

As winemakers advance into the computer age, Vahl's Winemaker's Database promises to be a valuable tool. Its custom design, flexibility, and speed and accuracy of information retrieval can add precision to the scientific side of winemaking.

NEW PLASTIC WINE CONTAINERS:

1.5L Carton from Cribari . . .

Guild Wineries recently introduced the Cribari easy-pour winepack in a 1.5-liter size. It is a gable-top container, very similar to a paper milk carton but shrink-wrapped and consisting of seven layers and a heat-sealed plastic resealable spout.

The patented seven-layer packaging includes a low-density polyethylene inner layer surrounded by an aluminum metalization of polyester layer that is oxygen-impermeable. Layer #3 is an adhesive, surrounded by an aluminum layer #4. Layer #5 is polyethylene, with a paperboard layer on top. The outer layer is polyethylene printed with ultraviolet inks. An 1800mL package containing wine has been tested and found to absorb 0.0008cc of oxygen in a 24-hour period.

Unlike a conventional milk or juice carton, the new package is scored and folded so that wine is not in contact with the cut edges of the carton material. This prevents seepage through the various laminations and limits any oxygen penetrating through the seal.

Fuji Winery in Japan first began packaging wine in this package in 1983 and now produces 1.5 million units/year. Guild Winery tested the patented package with vibration and drop testing to be sure that leakers would not be a problem when transported long-distance. The package was test-marketed in Australia in 1986. The cartons are fabricated and gravure-printed by Toppan Printing in Japan before shipment to the U.S. in sleeve form for filling. The filling equipment is provided by Toppan and can fill up to 65 1.5L cartons/minute.

The Winepack weighs one-third less than a comparable 1.5L glass package and not only fits compactly into a refrigerator but is suitable for picnics, camping, boating, beaches, and other informal events.

Cribari shipments to retailers of five packages through October 1, 1986, were 35% Chablis, 34% Blush Chablis, 10% Burgundy, 10% Rosé and 10% Rhine.

. . .187mL Bottle from J. Lohr

After two years of searching for and testing plastic products, J. Lohr Winery, San Jose, CA, has added a plastic 187mL bottle with a roll-on aluminum closure to its cork-finished offerings. The new package is available with five different varietal wines. At least three airlines have ordered the package because of the opportunity to save fuel while serving premium wine, due to a better than 30% reduction in weight over glass containers.

In addition to airlines, the package provides a non-breakable product for informal settings such as swimming pools, ski resorts, and ships, in addition to beaches where glass bottles are not allowed by law. Wines available include Chardonnay and Gamay from Monterey County, a Chenin Blanc from Clarksburg, a central coast white Zinfandel, and a California Cabernet Sauvignon.

Eastern Air Lines has begun serving one white and one red wine from the J. Lohr line, alternating varietals monthly. TWA and Piedmont Airlines have also placed orders, raising the total to 30,000 cases for the three airlines.

Barry Gnekow, winemaker, recalls the research involved in finding a suitable package: “We told California Glass Co. that we were interested in some kind of plastic wine package. We initially planned to use a standard PET (polyethylene terephthalate) bottle without oxygen-barrier characteristics. But we decided instead that we wanted a bottle with a layer to preclude oxygen permeation. California Glass undertook research into what was available, as well as what technical advances had been made recently in plastic container production.

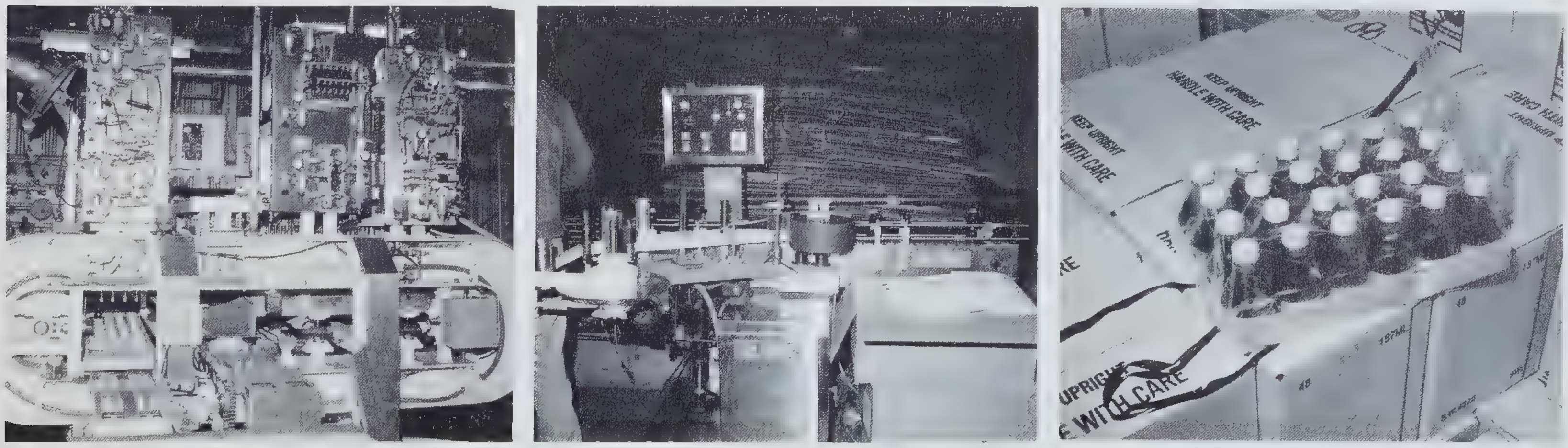
“They found a PET container which had been subjected to a tri-lamination process. After a protocol test with this bottle, California Glass determined that its oxygen-barrier capacity was excellent. The outer and inner layers are made of PET, and the middle, oxygen-impermeable layer is made of ethylene vinyl alcohol. The bottle is available in any color. A co-injected stretch blow mold is required to make the bottle.

“This product was developed in Japan by Nissei, which makes the co-injection stretch-blow machine. The company tested the bottle and found no dissolved oxygen pickup in white wine after 33 weeks and, in red wine, after 100 weeks. We tested wine in prototype 10-oz bottles and analyzed samples for dissolved oxygen and free SO_2, in addition to blind tasting. There was no dissolved oxygen pickup and a little drop in free SO_2 in white wine after five months.

“We are field-testing three different plastic barrier bags for the 24-bottle tray, which duplicates the shelf life of a glass bottle.

The plastic bottles cost 25% more than glass equivalents, but the airlines have traded a slightly higher cost for fuel savings due to weight reduction to serve premium varietal wines to their passengers.

To meet the market demand, J. Lohr has grafted over 90 acres of red grapes to Pinot Blanc, Chardonnay and Johannisberg Riesling in their Monterey County vineyard. J. Lohr also harvests Chenin Blanc, Sauvignon Blanc and Cabernet Sauvignon grapes from 190 acres in Clarksburg and 34 acres in the Napa Valley in addition to 190 acres already planted to white grapes in Monterey county.

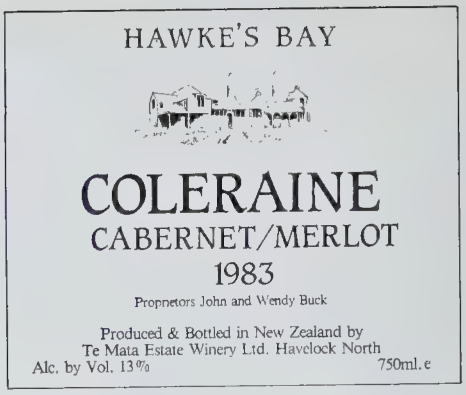


A custom filling machine (l) has been built that can empty the case, fill, and cap up to a maximum of 200 plastic or glass bottles/minute. The machine can fill any bottle less than eight inches high and could be modified to handle crown caps. A Precision labeler (c) applies pressure-sensitive labels to bottles. There are 24 bottles packed to a shrink-vacuumed tray (r) with a barrier bag that has been tested to keep oxygen pickup within the package to under .05% after six months. Two trays of the bottles fit into a corrugated shipper.

Matawhero

1984
Gewürztraminer
Produced and bottled by Matawhero Wines, Riverpoint Road, Gisborne
11% Alc. by Vol. 750 ml
PRODUCT OF NEW ZEALAND

New Zealand Winemaking Report



HAWKE'S BAY

COLERAINE
CABERNET/MERLOT
1983
Proprietors John and Wendy Buck
Produced & Bottled in New Zealand by
Te Mata Estate Winery Ltd. Havelock North
Alc. by Vol. 13% 750ml.e

Twenty-five years ago, New Zealand's primary winemaking grapes consisted of hybrids such as Baco 22A or Seibel 5455, and *labrusca* varieties such as Albany Surprise. The late 1960s and early 1970s saw an increase in plantings of *vinifera* varieties, including Muller-Thurgau, Cabernet Sauvignon, Chardonnay, and Pinot Noir. Chenin Blanc and Gewurztraminer began to be planted in the late 1970s. Today, *vinifera* varieties account for over 90% of total winegrape plantings.

New Zealand's Ministry of Agriculture and Fisheries has conducted a survey of New Zealand's vineyards every five years since 1960. The numbers alone tell the story of New Zealand's growth in winegrape production. In 1960, total plantings were 388 hectares; by 1983, that number had risen to 5,876. Most of that increase has taken place in the last ten years.

While Muller-Thurgau covers by far the most acreage of New Zealand winegrape plantings (1,873 hectares in 1983), other varieties are growing in popularity. Cabernet Sauvignon accounts for 7.1% (414 hectares) of plantings, ranking second in acreage to Muller-Thurgau, a position it gained due to its popularity in the early part of this decade. New Zealand's cool climate gives its Cabernet Sauvignons a lightness of body but full varietal flavors without heavy tannin.

Chardonnay, accounting for 6.8% (402 hectares) of plantings, ripens mid-season to produce a medium-bodied wine with varietal earthy flintiness. Gewurztraminer, whose popularity boomed in the late 1970s, currently accounts for 4.8% (284 hectares). Also a mid-season ripener, New Zealand Gewurztraminer has plenty of sugar but, due to characteristic poor set, produces low yields of five–eight tons/hectare.

The wineries interviewed below represent a random sampling from five of New Zealand's winegrowing regions: Henderson (Delegat's), Kumeu/Huapai/Waimauku (Coopers Creek, Nobilo), Waikato/Bay of Plenty (Morton Estate), Gisborne on Poverty Bay (Matawhero), and Hawke's Bay (Brookfields, McWilliam's, Te Mata).

In Henderson are some of the oldest wineries in New Zealand, and certainly the most. Grapegrowing, however, has decreased considerably since 1975, from 750 hectares (32% of total New Zealand plantings) to 455 hectares (7.7%). This is due to the area's wet, humid climate and heavy soils, to which the hybrids adapt but not the more popular *vinifera* varieties.

The Kumeu/Huapai/Waimauku region accounted for only 19% of all plantings in the Auckland province in 1960. By 1975, that figure had increased to over 50% due to wineries in Henderson, where land was valued at $4,500/hectare, looking for inexpensive land on which to expand. Kumeu/Huapai/Waimauku proved a good value at $1,500/hectare. The region is particularly noted for its red wines, especially Cabernet Sauvignon.

Heavier demand for white wine has led to increased plantings of Muller-Thurgau and Chenin Blanc in the Waikato/Bay of Plenty region in recent years. The area is, however, noted for its Cabernet Sauvignon as well. Viticultural activity is centered at Te Kauwhata, where the government research station is located.

Gisborne on Poverty Bay is the site of the greatest viticultural expansion of the last ten years in New Zealand. By 1982, almost 200 grapegrowers held among them one-third of New Zealand's total winegrape plantings, or 1,922 hectares. Sunshine is not a problem in this region, but the deep, fertile soils can lead to vine vigor and overcropping. White wine grapes grow best in this region, especially Muller-Thurgau, Gewurztraminer, and Chardonnay.

Hawke's Bay is the second-largest winegrowing region in New Zealand, with 1,891 hectares. The region produces both red and white wines, and is one of the driest and sunniest areas in the country. It is, however, vulnerable to easterly cyclonic depressions and their accompanying rainfall.

McWilliam's

1983
Vintage

PRODUCT OF McWILLIAM'S WINES
SELECTED PRIVATE BIN

Cabernet
Merlot

This wine a varietal blend of 60% Cabernet Sauvignon and 40% Merlot has been matured in American Oak Merlot the classical grape of Bordeaux contributes a rich fruitiness which complements the traditional full grape flavour of the Cabernet Sauvignon
Cabernet Merlot is ready to drink now but with further bottle aging will develop additional distinctive subtleties characteristic of this fine premium wine

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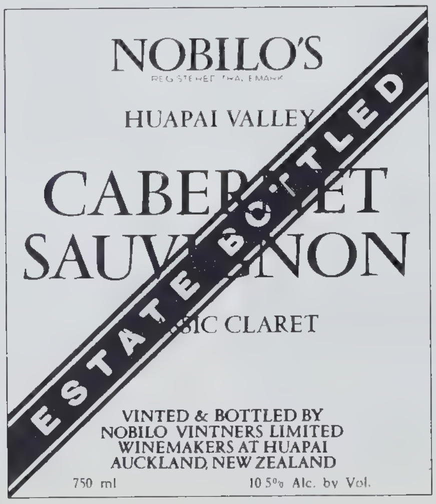

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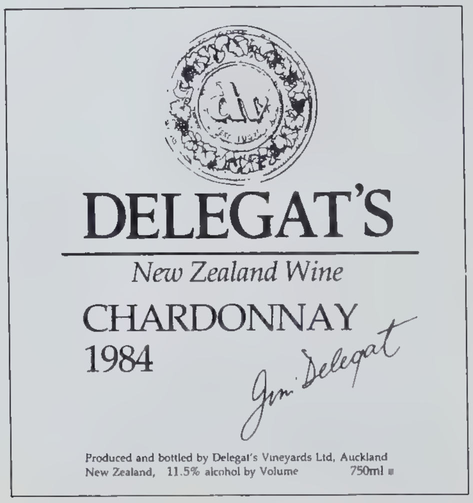

DELEGAT'S
New Zealand Wine
CHARDONNAY
1984
Jim Delegat
Produced and bottled by Delegat's Vineyards Ltd, Auckland
New Zealand, 11.5% alcohol by Volume 750ml

BROOKFIELDS 1984 CABERNET SAUVIGNON

(Barrel Sample)

PW: Please describe your style:

Peter Robertson: Our style of Cabernet Sauvignon is a blackcurrant, berryish, typically New Zealand style. Later picking dates in hotter years with longer skin contact gives a fuller style. We balance according to the year, concentrating on the acid/alcohol and tannin balance. Upon release, the wine exhibits youthful characteristics requiring cellaring for fruit and oak to marry. Estimated cellaring potential is ten years. The acid/pH balance ensures that the wine will hold together during ageing.

This wine goes well with steak and New Zealand lamb dishes.

PW: Describe the vineyards:

Our grapes are purchased from the Tuki Tuki Vineyard, a hillside vineyard with a northern exposure sheltered by hills from cool sea breezes and catching optimal sunshine. The vines were planted in 1975.

The training/trellising system is Geneva Double Curtain (GDC). In addition to winter pruning, the vineyard is summer-pruned by hand to open up the middle of the rows. The four ton/acre yield is controlled by thinning at veraison.

The topsoil is thin (18″) with a clay hardpan underneath. Annual rainfall is 25 inches. There is no irrigation. Budbreak occurs in September, with berry set in December and veraison in February.

PW: When do you harvest the grapes?

The grapes are handpicked between April 20 and May 5. The acidity/pH balance and sugar level are the harvest criteria. Our goal is 21–22° Brix, 8.0–9.0 TA and 3.3–3.35 pH.

PW: How is the wine made?

Chaptalization has been done. Skin contact time is 8–10 days. The must is inoculated with 5% active-dry Helix 1000 yeast. The peak temperature during fermentation is 28°C. Fermentation lasts 13 days and pump-over is 3-4 times/day. The decision on when to press is determined by taste.

We inoculate with LS-5A Leuco Start to encourage malolactic fermentation during primary fermentation. Malolactic is finished in 6 - 8 weeks. We maintain the temperature to encourage it to finish.

The wine is cold-stabilized before going into oak by chilling the wine to −2°C for 7 days. Barrels are topped weekly until rolled. Barrel ageing lasts 12–14 months in new Nevers oak.

The wine receives a coarse pad filtration before bottling. Bottles are sparged with nitrogen. The free SO_2 is 18–20 ppm and total is 65 ppm.

Tasting Notes:

Color/Aroma: Ruby/brick, turbid; vegetal, plummy.
Flavors: Coffee, chocolate, vegetal, plummy, ripe cherries, peppery, cigar box, some oak, blackberries, varietal.
Balance/Finish: Soft, high pH, slightly bitter, good acid and tannin.

COOKS/McWILLIAMS 1983 60% CABERNET/40% MERLOT

PW: Please describe your style:

Evan Ward: We try to balance the individual varietal characters of the Cabernet and Merlot to give a wine with good fruit flavors balanced with integrated oak. Upon release, the wine is youthful, showing Cabernet fruit which is rounded out with the slightly lighter Merlot; wood is showing but not dominant.

At optimum maturity, the wine is soft and well-rounded, and shows an integration of both varieties, neither one really dominating. We estimate a cellaring potential of ten years. The 1983 vintage has 11.9% alcohol, 5.8 g/L TA and 3.65 pH. I recommend the wine with red meat in general, but not heavily seasoned.

PW: Describe the vineyard:

We have eight acres of Merlot planted in Hawkes Bay in 1978 at 20-foot elevation with a northwest exposure. We grow Cabernet in an adjacent vineyard in Hawkes Bay; those vines are about 8 years old. Both cultivars were planted on their own roots and spaced 10x6. The vines are pruned to two rods only, approximately three feet long each on a five-wire six-foot tall vertical trellis set up for mechanical harvesting and yielding about 4 tons/acre.

Our top soil is 9–10 inches of alluvial clay loam at 5.9 pH on top of permeable clay. The vineyard receives a spring mix of phosphate, nitrogen, and potassium at 100–200 lbs/acre when soil tests indicate need for it. Our annual number of degree days is 2,200, and we receive 30 inches of annual rainfall, including 12 inches during the growing season. Our climate is very similar to Bordeaux except for being an island climate, not a continental climate. Bud break is usually about September 20 with berry set about November 20 and veraison about February 1.

PW: When do you harvest the grapes?

In our cool climate, we try to optimize varietal character by allowing grapes to hang on the vine as long as the weather permits. We will pick both varieties in late April or early May. The harvest window is 19.5–23.0° Brix with 7.0–10.0 g/L TA and 3.3–3.6 pH. The 1983 Cabernet was picked at 22.3° Brix with 7.5 g/L TA and 3.44 pH. The 1983 Merlot was picked at 19.8° Brix, 9.0 g/L TA and 3.3 pH. Our first criteria is fruit flavor, then acidity commensurate with good grape conditions.

PW: How is the wine made?

The Merlot and Cabernet receive no SO_2 at crush and were co-fermented for one week at 18–22°C with 3% inoculum of R92 liquid-culture yeast. The fermenter was pumped over twice a day for one hour with a mono pump every day of fermentation. The wine is pressed off the skins at dryness to maximize extraction during fermentation. The wine is centrifuged prior to inoculation for malolactic fermentation with our own locally-isolated strain of *L. oenos* and encouraged by keeping the wine warm at greater than 14°C and completes in 2–4 weeks after primary fermentation.

The wine is racked off the lees after completion of malolactic and given 10–15 ppm free SO_2. A coarse DE filtration is done before barrel ageing in two-year-old American oak 500L barrels, coopered in Australia. The wine is not topped; the barrels are rolled to the two-o'clock position and stored for 9–12 months. After barrel ageing, the wine is cold-stablilized at −3°C for two weeks. A medium pad filtration is done before bottling. Prior to bottling, the wine has an addition of 11–15 ppm free SO_2.

Tasting Notes:

Color/Aroma: Medium red, hint of brown; green pepper, vegetal, chocolate, tobacco, cranberry, mint.
Flavors: Soft fruit, some oak, ripe rich flavors, bell pepper, blackberry, jammy.
Balance/Finish: Light-bodied, light tannin, drinkable, simple, astringent, slightly flat.

COOPERS CREEK 1984 GEWÜRZTRAMINER

PW: Please describe your style:

Randy Weaver: We produce a dry style and I believe at least 11.5% alcohol is necessary to give enough body. Upon release the wine has light but distinctive varietal character with slightly crisp acidity. The wine has an ageing potential of about three years in which the wine gains an intense bouquet with a smooth finish. The 1984 vintage had 11.4% alcohol, 7.9 g/L TA, 3.3 pH and 0.5 g/L residual sugar. I enjoy the wine with onion soup.

PW: Describe the vineyard:

We purchase grapes from I. Smith at Te Kavaka (Poverty Bay). The vineyard is on a sheltered river bank at 117 feet elevation. The vines were originally planted on their own roots in 1979 spaced 10 x 5.5 for 750 vines/acre. They are being replanted on SO4 rootstock over a three-year period. The vines are cane-pruned to about 50 buds on four canes to yield 4–5 tons/acre. This is one of the harder varieties to prune as there is more cane growth around the head of the vine; it tends to produce a second crop.

The top soil is 20 feet of heavy silt loam with a pH of 5.8 and the vineyard is tile-drained. The vineyard receives a lime addition for pH control and foliar feeding of potassium superphosphate every other year. Oats are sometimes interplanted in the winter to improve the soil structure.

The region receives an annual average of 2300 degree days and 40 inches of rainfall with one-third in the growing season. The vineyard is dry-farmed and has not experienced frost damage in ten years. Bud break occurs in the end of September, berry set at the end of October and veraison is late January or early February.

PW: When do you harvest the grapes?

The grapes are usually mechanically harvested between March 10–20. We pick first on flavor by tasting the grapes in the vineyard to optimize flavor. The grapes will typically have 20–22° Brix, 6.0–7.0 g/L TA and be between 3.5–3.65 pH. Grapes in 1984 were 20.4 ° Brix with 6.0 g/L TA and 3.65 pH. The grapes receive 75 mg/L SO_2 when harvested.

PW: How is the wine made?

We chaptalize to bring the must to 21° Brix and adjust the SO_2 to 30 ppm free. 20 ml/ton of pectic enzyme is added and 2 g/L of tartaric acid is added pre-fermentation. The grapes receive minimal skin contact of two hours at 20°C followed by pressing and cold settling of the juice for three days at 3°C. The juice is racked off and inoculated with 0.15 g/L Montrachet active-dry yeast. The juice lees are recovered with a vacuum filter and the juice is blended into a house white wine.

Fermentation takes about 21 days at 12–13°C. After fermentation, an SO_2 addition is made to achieve 30 ppm free. The wine receives a coarse DE filtration off the yeast lees. A bentonite addition of about 4 lbs/1,000 gal is made followed by cold stabilization at -2°C for 21 days. A medium DE filtration is done off the tartrates. All wine movements are done under a CO_2 blanket. The wine receives 50 mg/L of erythorbic acid before a sterile pad filtration at bottling. The finished wine has 37 ppm free and 180 ppm total SO_2 and is bottle-aged one month before release.

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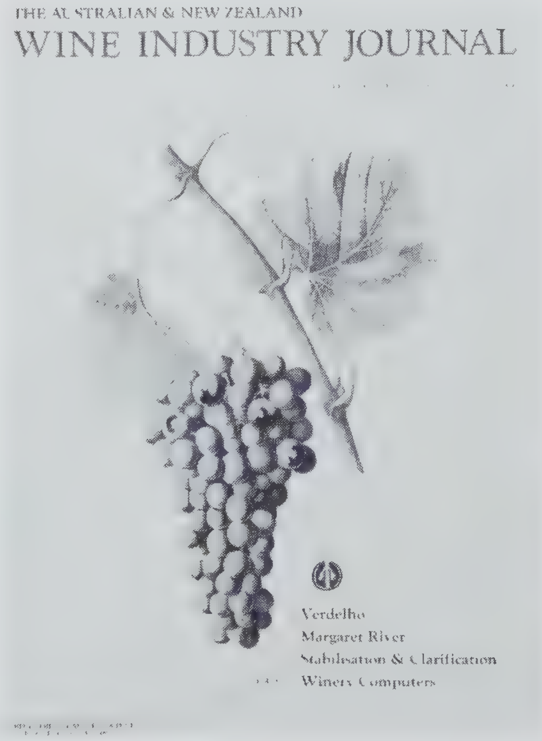

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Tasting Notes:
Color/Aroma: Light yellow; lychee-nut, spicy-cinnamon, citrus, apricots, rose water, musty.
Flavors: Same, clean.
Balance/Finish: Good sugar/acid balance, slight bitterness.

DELEGATS VINEYARDS 1984 CHARDONNAY

PW: Please describe your style:

Larry McKenna: Our first consideration is trying to retain as much fruit character as possible. We look for very clear strong varietal character with dominant acid in the juice. The wine is oak-aged to embellish rather than dominate. Our goal is a balance between fruit, wood, and acid.

Fermentation is fast and strong at higher-than-normal temperatures to ensure depth and breadth. We accentuate varietal character by picking fruit as ripe as possible in association with tasting juice samples. We recommend the wine to accompany stronger-flavored seafood and white meats such as crayfish, poultry, and veal.

Upon release, the wine is very young, not ideally ready to drink, certainly far from its peak. The fruit becomes more obvious from the second year onwards to its peak at five years past vintage. At optimum maturity, the honeyed, developed Chardonnay fruit character has developed and dominates the wood flavors; the acid does not dominate. The best characteristics of this wine are its strong fruit balanced by very good quality French oak and firm, obvious acid.

PW: Describe the vineyards:

We buy grapes from a valley floor vineyard in the Gisborne area on the east coast of New Zealand's north island at 100-meter elevation. These grapes constitute 50% of the blend. The other 50% comes from the Taupaki region adjacent to Auckland, which is on an exposed coastal plain at 200-meter elevation. Gisborne has clay silt loam topsoil of 15-foot depth over a gray clay subsoil with a pH of 5.5. Taupaki has an alluvial loam topsoil of 12-inch depth over well-drained yellow clay subsoil in a flood plain with a pH of 5.8–6.2.

The Gisborne vineyard was planted in 1982 and the Taupaki vineyard in 1979 on 6x9 spacing (six feet apart with 9-foot rows) on an east-west axis. Both regions receive 1,100–1,400 degree days/year. Annual rainfall is 52 inches in Taupaki and 35 inches in Gisborne with rainfall in the growing season of 25 inches in Taupaki and 10 inches in Gisborne. The regions have little frost damage potential.

Thirty percent of the vines are on their own roots and 70% were budded onto SO4 rootstock. The traditional New Zealand trellis has a single fruiting wire on an upright trellis. Cane pruning to 60 buds/vine is done in June and July and the yield is three tons/acre. Bud break is mid-September, followed by berry set in early December and veraison in early February. One viticultural problem is higher-than-normal pH associated with relatively high acids.

Spray program includes Dithane M-45 at 2–3 cm shoot growth. Wettable sulfur is added to the Dithane for downy and powdery mildew at 10- to 14-day intervals until early bloom. Euparen is used for botrytis at early blossom. At cap fall, Bayleton 250 is added to the Euparen for botrytis and powdery mildew control. Bayleton and Dithane M-45 are continued at 10- to 14-day intervals until veraison. At bunch closure, Euparen is used. Before harvest, there are 2 Ronilan sprays for botrytis control.

PW: When do you harvest the grapes?

The grapes are mechanically picked in March and April

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when there is a balance between pH, acid, and sugar. The level of botrytis infection and flavor are also considered. The single deciding factor would be Brix.

PW: How is the wine made?

Twenty ppm SO_2 is added to the gondola at picking and another 20 ppm at crush along with 50 ppm sodium erythorbate. The 1984 wine was chaptalized 20 g/L with cane sugar. Twelve hours of skin contact at ambient temperature was given before liquid-yeast culture. Juice lees were processed by rotary vacuum filter and the juice fermented separately for other products.

Fermentation took 20 days at 15°C. The wine is racked off the yeast lees at dryness and receives a DE filtration before barrel ageing. The free SO_2 is maintained at 20 ppm between fermentation and bottling. An addition of 50 ppm sodium erythorbate is made at first racking. The wine is aged in new Seguin Moreau puncheons from the center of France for four months, and puncheons are topped weekly.

The heat stability test is four hours at 80°C, followed by cooling and inspection for haze. Wine from Taupaki usually requires 500 ppm bentonite, while wine from Gisborne requires about 800 ppm. The bentonite addition is made just after the first racking and before cold stabilization, which is holding the wine at −3°C for five days. The cold stability test is holding the wine at −4°C for 24 hours followed by visual inspection.

A sterile pad filtration is done prior to bottling. There is a 0.65μ membrane cartridge on the bottling line. CO_2 is used throughout the processing to avoid oxidation of the wine. The bottled wine has 20 ppm free and 120 ppm total SO_2, and 50 ppm sodium erythorbate.

Tasting Notes:

Color/Aroma: Straw gold/green; oak, honey, developed bottle bouquet, pine, perfumy, papaya, peaches, intense, estery, slight grassiness.

Flavors: Oak, butter, rich, glycerol, exotic Chardonnay fruit, complex.

Balance/Finish: Balanced, good acidity, tart, firm.

MATAWHERO 1984 GEWÜRZTRAMINER

PW: Please describe your style:

Hatsch Kalberer: Our wine is bone-dry with strong varietal character which improves with bottle age. Upon release, the wine is spicy on the palate, but quite hard and closed in the nose. At maturity, between 3 - 10 years, the wine is medium to full-bodied, full of varietal character, and suggesting some residual sugar. The wine has a balance of fruit and acid. The 1984 wine has 11% alcohol, 5.6 g/L TA, 3.55 pH, and under 0.5 g/L residual sugar. I recommend the wine to accompany duck, pheasant and liver dishes.

PW: Describe the vineyard:

Our vineyard, here in Gisborne, was planted in flat alluvial plains near sea level in 1969. The vines were planted on own roots and spaced 11x7 for 588 vines/acre. They are cane-pruned in the Bender Bogen system to 55 buds/vine, which yields about four tons/acre. The top soil is 3–3.5 meters of heavy silt loam on top of fine alluvial gravels. The vineyard receives a maintenance fertilization every three years of 100 kg/Ha DAP, 32 kg/Ha elemental sulphur, 12 kg/Ha borate zinc, and 30 kg/Ha of manganese sulphate.

Annual rainfall is about 34 inches with 18 inches in the growing season. Budbreak is early to mid-September followed by berry set at the end of October and beginning of November with veraison in mid-January. The vines are hedged three times per season and leaves are manually removed twice, the second time just before veraison. One problem is excess vigor due to soil fertility.

A typical spray program consists of lime/sulphur at bud burst followed by Mancozeb and wettable sulphur every 10–14 days until early bloom for downy mildew, black spot, and powdery mildew, etc. Magnesium sulphite is included in alternate sprays to vines on SO4 rootstock in high-pH soils. During blossom, there are two applications of Euparen for botrytis and downy mildew, one at less than 5% cap fall and at 85–90% cap fall. One application is done before 5% cap fall of Thuricide and Rubigan for leaf roll caterpillar and powdery mildew.

Just prior to bunch closure, one application of Euparen is done for botrytis. Copper oxychloride for downy mildew and blackspot is applied at 10–14 day intervals and Rubigan is applied until veraison for powdery mildew. Folimat is applied as required for mealy bug before bunch closure. A maximum of two applications of a Di Carboxanide (Rovral, Ronilan, Sumisclex) is applied pre-harvest due to resistance problems.

PW: When do you harvest the grapes?

The first criterion for picking is flavor and the grapes are mechanically harvested typically between March 10–30. Our typical harvest window is 20.5–21.5° Brix with 6.0–7.5 g/L TA and 3.6–3.65 pH. The grapes in 1984 were 20.5–21.0° Brix, 4.8–6.3 g/L TA and 3.7–3.8 pH.

PW: How is the wine made?

At crush, we add 35–50 ppm SO_2 and tartaric acid before fermentation up to 2 g/L. The grapes receive up to 12 hours skin contact at 15–22°C. The juice is settled at around 8–10°C between 12–24 hours. We rack off the juice solids as soon as a

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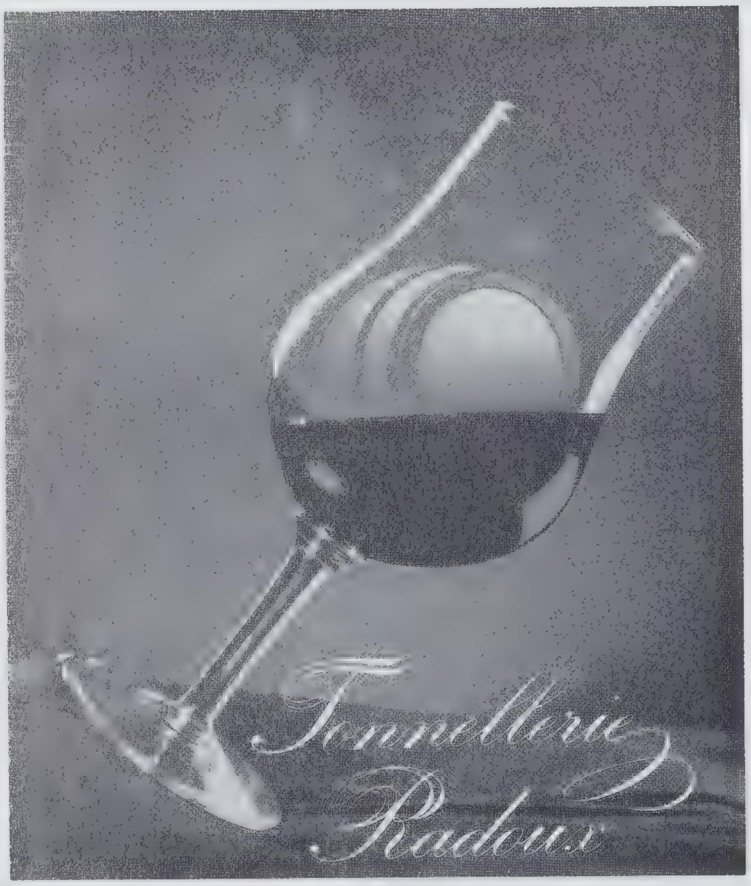

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wild yeast fermentation begins. Fermentation takes 12–20 days with fermentation temperature controlled to 12–15°C until 8° Brix when the cooling is turned off.

The wine receives an addition of 30 ppm free SO_2 after fermentation. The wine is fined with 1.0–1.5 g/L bentonite and yeast-fined with some of the best yeast from the best fermenter of Gewurztraminer and 0.4 g/L PVPP to remove bitterness. The wine receives up to 2 g/L tartaric acid addition before cold stabilization after fining at about −3°C for about eight days with stirring twice/day. A final acid adjustment for balance is done with up to 0.5 g/L malic acid.

Filtration includes a coarse pad filtration followed by a tight pad filtration and sterile pad filtration prior to bottling. There is an 0.65μ membrane cartridge in-line at bottling and the wine has 30 ppm free and 112 ppm total SO_2. All wine movements are done under a CO_2 blanket and bottling is done under a nitrogen blanket. The 1984 wine was bottled in March 1985 and released in June 1986.

Tasting Notes:
Color/Aroma: Straw gold/green; lychee-nut, spicy-cinnamon, floral, apricots.
Flavors: Good varietal, delicate, rose water.
Balance/Finish: Viscous, a bit flat, high pH, slightly bitter, clean.

MORTON ESTATE 1984 RESERVE CHARDONNAY

PW: Please describe your style:

John Hancock: I like to make a Burgundian-style Chardonnay. I like this style, because it has ageing potential, it gains complexity with oak contact and is suitable with food. We barrel-ferment on relatively high solids, at 18–20°C and give long yeast lees contact. Upon release, the wine shows good Chardonnay fruit and oak with a slight acid finish, not totally integrated yet. With bottle ageing, the wine adds a rich and buttery character to the fruit and oak and gains a softness and roundness on the palate. I recommend the wine with game, veal, white meat and seafood, but not too delicate. This wine had 13.0% alcohol, 8.2 g/L TA, and 3.51 pH.

PW: Describe the vineyard:

We purchase grapes from the Dr. Hewitt Vineyard in Hawkes Bay which was planted in 1979 on its own roots to a vertical trellis suitable for mechanical harvesting. Vines are spaced 6x10 for 760/acre and are cane-pruned to six short canes of 60 buds/vine to optimize bud burst to overcome poor fruit set. Average yield is three tons/acre. The nine feet of topsoil is alluvial silt with intermittent shingle with a 6.2 pH on top of a shingle subsoil. The site is low region 1, receiving 2160–2250 average annual degree days. Average annual rainfall is 30.6 inches with over seven inches falling during the ripening period. Bud break occurs in September followed by berry set in December and veraison in February. The vineyard has its own micro-climate, being situated between two steep banks and two shelter belts and receives cool spring winds from the nearby sea and river.

PW: When do you harvest the grapes?

The grapes are mechanically-picked between late March and mid-April. Fruit flavor is the first picking criterion, followed by sugar, acid and pH analysis. Our harvest goal is 22.5° Brix, 11 g/L TA and 3.3 pH. The 1984 grapes came in between 22.5–23.0° Brix, 10–11 g/L TA and 3.3–3.4 pH. 50 ppm SO_2 is added to the grapes when picked before truck transport to the winery.

PW: How is the wine made?

The grapes are crushed and receive 24 hours of skin contact at 10°C before pressing and subsequent settling at 5°C for 12 hours. The juice is racked off the gross lees and inoculated with 10g/hL active-dry Champagne yeast. Barrel fermentation takes two weeks in the 15°C cellar. Fifty ppm SO_2 is added after fermentation and the barrels are topped fortnightly during nine months of ageing in new 225-liter Nevers barrels.

Our heat stability test is 80°C for six hours, cool and inspect for haze. We usually need to add about 600 ppm calcium bentonite. We cold-stabilize the wine at −2°C for four weeks. The wine receives a casein fining of 50–100 ppm followed by tight pad and sterile pad filtrations. There is a 0.45μ membrane inline at bottling and the wine has 20 ppm free and 140 ppm total SO_2. The wine is bottle-aged six months before release.

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Tasting Notes:
Color/Aroma: Deep gold/amber; oaky, ripe (overripe?) fruit, toasty, some botrytis—apricot, orange-citrus, intense, caramelized, charred barrel, oxidized, tropical, nutmeg-eggnog.
Flavors: Oak dominates, good full fruit, possibly overripe, buttery flavors, butterscotch, orange.
Balance/Finish: Long finish, viscous, full-bodied, wood tannins, hot, rich, acid OK, glycerol, extreme style.

NOBILO 1983 CABERNET SAUVIGNON

PW: Please describe your style:

Nick Nobilo: The 1983 Cabernet has all the components: fruit, acid, tannin, oak and alcohol in good balance which will develop in complexity and intensify with age. Upon release the wine is a classic European style Cabernet akin to Margaux in its youth. The wine will pick up elegance with bottle age up to ten years. One of the best characteristics of this wine is the herbaceous capsicum flavor of cool-climate Cabernet which develops with age. The 1983 finished wine has 11.5% alcohol, 6.7 g/L TA, 3.45 pH, 1.0% r.s. and 0.89 VA. I recommend the wine to accompany strong red meats and certain cheeses (flavorful but not overpowering).

PW: Describe the vineyard:

We have sixty acres planted to Cabernet located in the Huapai Valley 17 miles northwest of Auckland, nestled between hills at 500-foot elevation with a northeast exposure. The vines were planted between 1971 and 1975 and spaced 3.5 feet apart with 10-foot rows. 5BB and 1202 rootstocks, which suit the heavy clay/loam soil, were used and also because phylloxera is in the area. Lime additions are made in June to maintain calcium in the soil and the soil pH at about 6.0. A dressing in the spring of nitrogen, potassium, phosphorus and manganese is based on soil test results.

We have a 'T' bar trellis system with 'T' bars at six feet above ground to afford better exposure to sunlight and allow air circulation in our humid climate. Short rod pruning is done leaving 8 to 12 buds with up to six rods to yield 4–5 tons/acre. We accumulate annual growing degree days between 1100 - 1400 with an average of 1200 above 10°C. Annual rainfall is 2,000 mm. Our mean daily relative humidity in January–February (coming into veraison) can be 80%. Bud break is in October followed by berry set in December and veraison in late February. We are susceptible to powdery mildew and have had some blind budding.

Sprays are applied on a 14-day cycle with a maximum application of 12 sprays/season. In the early season until flowering Metiram and wettable sulphur is used for downy and powdery mildew and black spot control. At flowering Euparen (dichlofluanid) is used. At fruit set, Bayleton and Folimat are used. Between fruit set and veraison, Metiram and Triadimefon are used. There are a maximum of three dicarboxymide sprays between veraison and maturity.

PW: When do you harvest the grapes?

Hand-picking is a must and we usually pick in mid-April. We check the TA and pH, but the final decision is made on analysis of varietal character in the grapes. Our harvest window is 19.5–21.5° Brix with 8–10 g/L TA and 3.4–3.5 pH. The 1983 wine was picked at 20.5° Brix, with 8.25 g/L TA and 3.4 pH. pH.

PW: How is the wine made?

The grapes receive under 50 ppm SO_2 at crush, and fermentation takes six days between 28–30°C using Siha 3 active-dry yeast. Pump-over is 15–20 minutes done three times/day with a mono pump. The wine is pressed off at dryness. First racking off the yeast lees occurs when the spontaneous malolactic fermentation completes about 3 - 4 weeks after primary fermentation.

The wine is centrifuged and receives a coarse DE filtration before barrel ageing in new and used 110-gal French oak puncheons. Barrel ageing takes 20–24 months and the barrels are topped monthly. Fifteen ppm free SO_2 during barrel ageing is maintained with adjustments every 4–6 weeks. A tight pad filtration is done prior to bottling. The wine is bottled with 15 ppm free SO_2 and 60–75 ppm total SO_2 and bottled aged 18 months before release.

Tasting Notes:
Color/Aroma: Medium red; cinnamon, cigars, chocolate, vegetal, VA, oaky, plummy, overripe.
Flavors: Soft fruit, chocolate, oak, VA.

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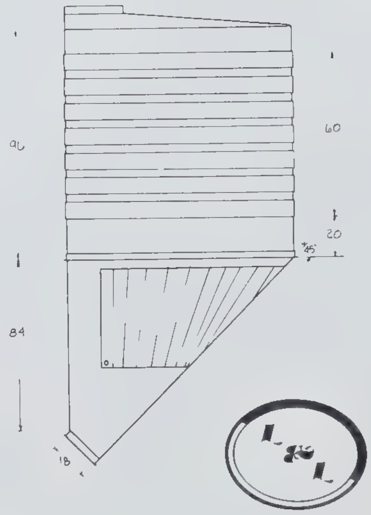
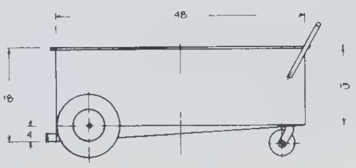

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Balance/Finish: Medium body, high pH, some tannin, astringent, overoaked.

TE MATA ESTATE WINERY 1983 COLERAINE CABERNET/MERLOT

PW: Please describe your style:

John Buck: Our winemaking style is typical Bordeaux. We pick ripe, between 22.5-2.5° Brix, with good berry appearance and flavor. It is a blend of Cabernet Sauvignon, Merlot and Cabernet Franc at the crusher. We add no sulphur at crush, and clarify by settling only. It is a basically balanced blend but might handle up to 5% more Merlot. It goes well with roasted or grilled red meats. At release the wine has ripe berry characteristics, oak and tannin. We believe that these components will integrate better with 10–20 years cellaring.

PW: Describe the vineyards:

The vineyard is a 5-acre block planted on a northern slope from 60 to 200 meters in elevation. Vinewood was grafted onto rootstock planted 10x5 in 1978. A two-meter upright trellising system with seven wires and the fruiting wire one meter from the ground is used. The vines are pruned to two canes and two spurs leaving a maximum of 16 buds/vine.

The vineyard, in the Hawke's Bay region, receives approximately 2600 degree days/year along with 29 inches annual rainfall with 11 inches during the growing season. The region has very little potential frost damage. Budbreak is in mid-October, followed by berry set in mid-December and veraison in early February. We average eight sprays/season.

PW: When do you harvest the grapes?

Grapes are handpicked between April 1–20 depending on appearance, flavor and lab analysis. The sugar will be 22.5–23.5° Brix, TA between 0.8–0.9 and pH between 3.25 and 3.4.

PW: How is the wine made?

Peter Cowley: Grapes are crushed with no SO_2, and tartaric acid additions have been made before fermentation to sustain balance. Active-dry yeast at 3–5 million cells/mL is used. Skin contact occurs over 18–21 days with fermentation peaking at 30°C during the 7–8 day fermentation. Cap management includes pump-over with a mono pump and punch-down four times each day during the early fermentation. Tasting of the wine will determine when to press off the skins after maceration.

The wine is inoculated with active-dry malolactic culture at 15 g/10,000mL during early primary fermentation. First racking off the yeast lees occurs when malolactic is completed, 7–10 days after pressing off skins. Four to six more rackings occur before bottling. The wine is put into 50% new and 2- to 3-year-old Seguin Moreau 225- and 500-liter barrels for 18–22 months. The barrels are topped weekly during the first nine months. When the wine is racked, SO_2 additions are made to maintain 10–15 ppm free by aspiration. The wine receives an egg-white fining of 1–2 egg whites/barrique at the end of the second spring or early summer. A coarse pad filtration is done before bottling. At bottling the 1983 wine had 10–15 ppm free and 52 ppm total SO_2 and was bottle-aged three months before release.

Tasting notes:

Color/Aroma: Deep purple, ruby; blackberry, peppery, oak, earthy, mint, jammy, cassis.

Flavors: Rich, full, fruity, brambleberry, peppery, cassis, chocolate.

Balance/Finish: Some tannin, well-balanced, lingering finish, lighter style, fresh, simple, firm.

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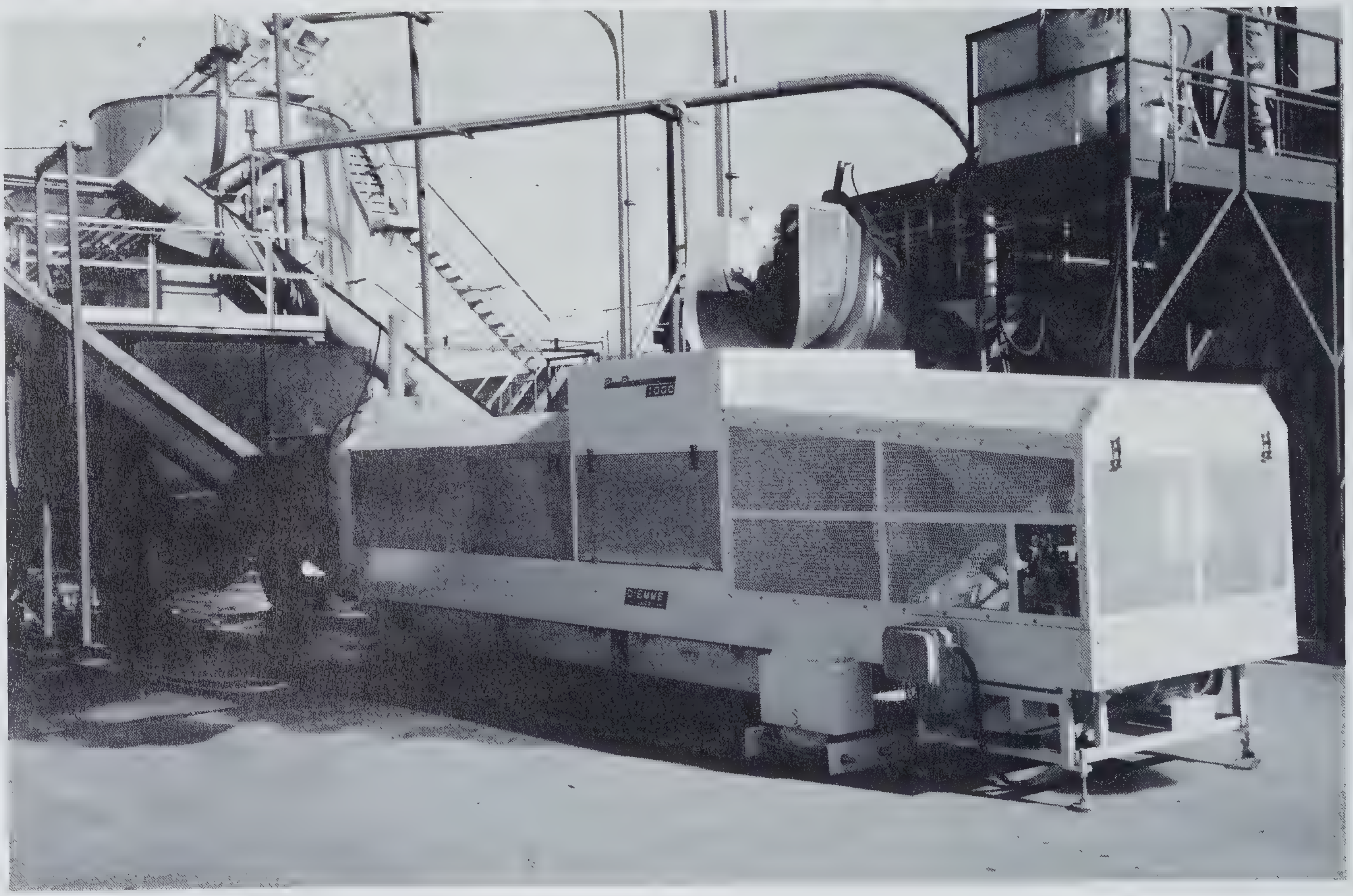

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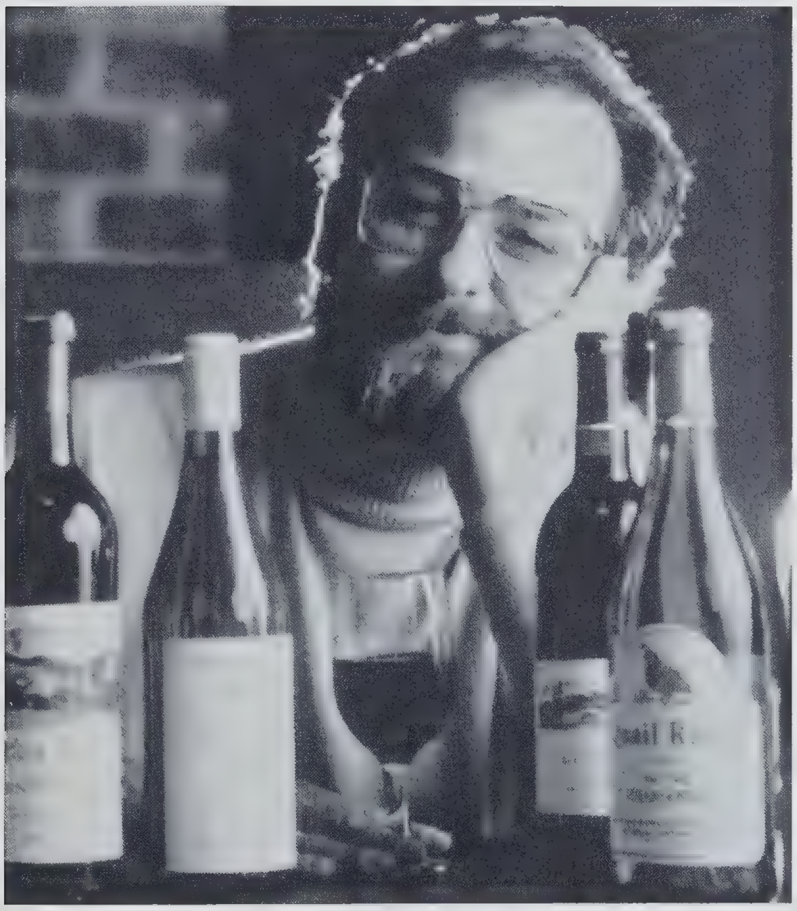
Wine Sales Techniques at Wooden Angel

Diane W. Mayfield

For suggestions on selling wine to restaurants, ***PW*** *is conducting an ongoing survey of techniques restaurants use to sell wine to their customers. By suggesting to restaurateurs specific ways in which their wine can be presented, winery sales representatives may be able to achieve two goals: 1) promote more wine sales and profits to wineries and restaurants; and 2) gain placement on an otherwise inaccessible wine list. Following is an interview with Alex Sebastian, proprietor of the Wooden Angel.*

Sebastian believes that the key to successful wine sales is gaining the consumer's confidence. Located in Beaver, PA, in an out-of-the-way location thirty miles from Pittsburgh, the Wooden Angel displays no sign outside. Yet the 100-seat restaurant, which serves only dinner, is filled to capacity on weeknights and fills twice over on weekends. "Ninety-five percent of our guests are repeat customers," says Sebastian.

Waitresses at the Wooden Angel are encouraged to offer wine suggestions. For instance, when customers request a generic wine before dinner, *i.e.*, chablis, "the waitress explains that we don't sell generics, only varietals, and that this month's house Chardonnay or Sauvignon Blanc would be good substitutes." She goes on to suggest that they might enjoy trying both as a wine-tasting experience. Sebastian points out that at this early stage of the meal, the waitress has already sold something that the customer might not have ordered: "She's selling them a taste, and she's selling herself—the confidence that she knows what she's doing."

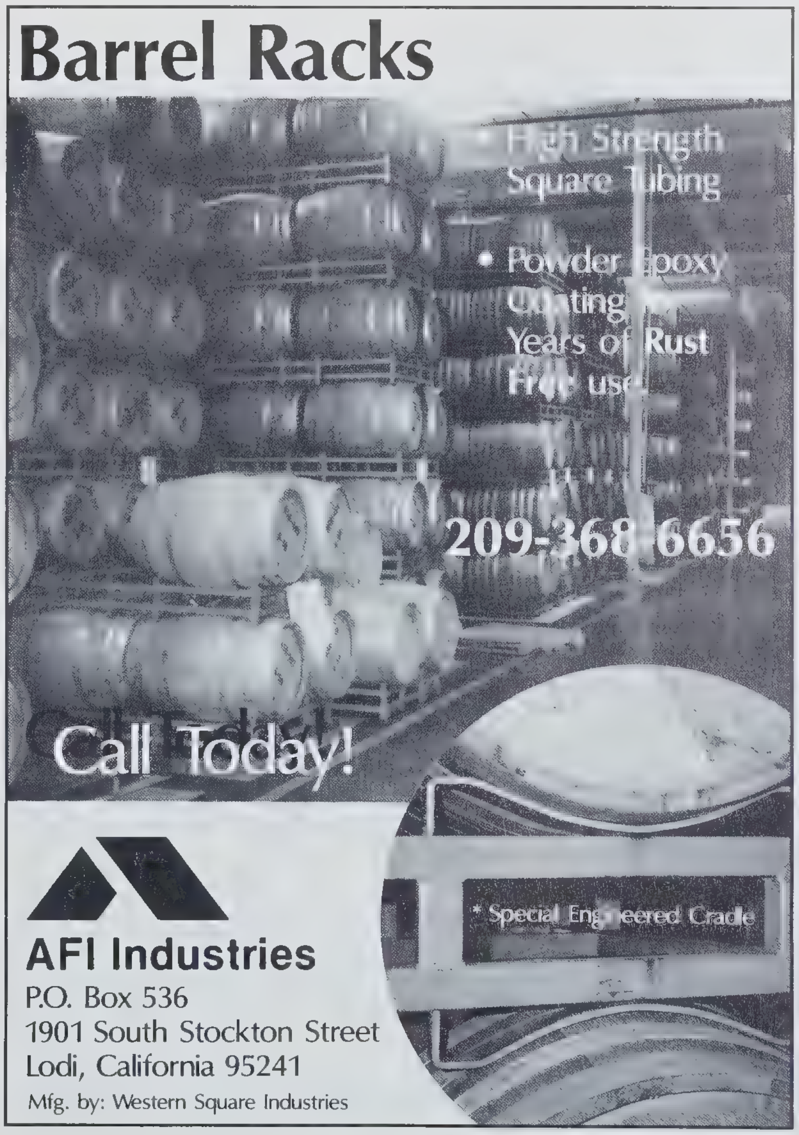


Alex Sebastian, proprietor of Wooden Angel.

A waitress might then suggest appetizers to accompany the wines. With the Chardonnay or Sauvignon Blanc, she might recommend baked clams, fresh stone crabs, pasta, or goat cheese. If the customers can't make up their minds, the waitress might say, "Why not let me fix you a combination of all four?" Sebastian points out that now "they've tried compatible wines and foods that they would not have ordinarily tried, even before they've ordered dinner. When the waitress comes back to take the dinner order, they're open to whatever suggestions she may make.

"By appearing knowledgeable, but not intimidating, the waitress invites the customers to partake in an exciting learning experience, with an experienced guide to lead them so that mistakes won't be made. This is something more than can be offered at home or at the average restaurant, where the customers generally stick with something safe and well-known."

The waitress continues to guide her customers throughout the meal, making food and wine suggestions, and recommending that each customer at the table order something different, both in food and in wine, and taste back and forth. "The menu is primarily verbal," Sebastian explains, "so the waitress is in an ideal position to make recommendations. Our wine list in-



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cludes over 500 wines, with more than 20,000 bottles in the cellar, and is updated every two weeks. Most customers are lost without recommendations."

The Wooden Angel features a 'Winery of the Month'. Charles Krug Winery was recently featured by offering 12 of their wines—ten by the glass or bottle, and two by the bottle only. 'Winery of the Month' offerings are advertised by a table tent on each table and are offered at 75% over cost.

"The dining experience described previously is what we're trying to sell," states Sebastian. "We don't want our customers to come in and settle merely for a steak or lobster, a baked potato, a tossed salad, and a glass of chablis because they don't know what else might taste good. We want to sell a total package more suited to individual customers."

Sebastian conducts staff tastings on a daily basis. When the waitresses come in to work, they taste foods from that day's menu with compatible wines so that they can see how the foods and wines go together. "We taste examples of pairings that work, as well as some that don't," Sebastian explains. "New waitresses begin by tasting and becoming familiar with 10 wines on the wine list. With this repertoire, they are quickly armed with enough variety to make recommendations to customers. Later, they will expand their familiarity with more of the wine list."

An example of compatible combinations explored in staff tastings would be rack of lamb with a medium-to-big peppery Zinfandel. "We marinate the lamb in a special marinade and the wine complements it perfectly. A poached sole with a little herb or spice on top needs a very delicate wine, such as a dry Chenin Blanc, to complement it. A buttery, toasty Chardonnay will stand up to a seafood stew. With seasoned softshell crabs, a vegetal or weedy Fumé Blanc works well, whereas with regular fish you'd want a Fumé made more in a Chardonnay style.

"With a broiled red salmon, peppered and seasoned, we suggest a lighter Zinfandel. A heartier Zinfandel, Charbono, or a peppery Cabernet Sauvignon goes well with blackened redfish. Guests are intrigued when we suggest non-traditional combinations, such as red wine with fish."

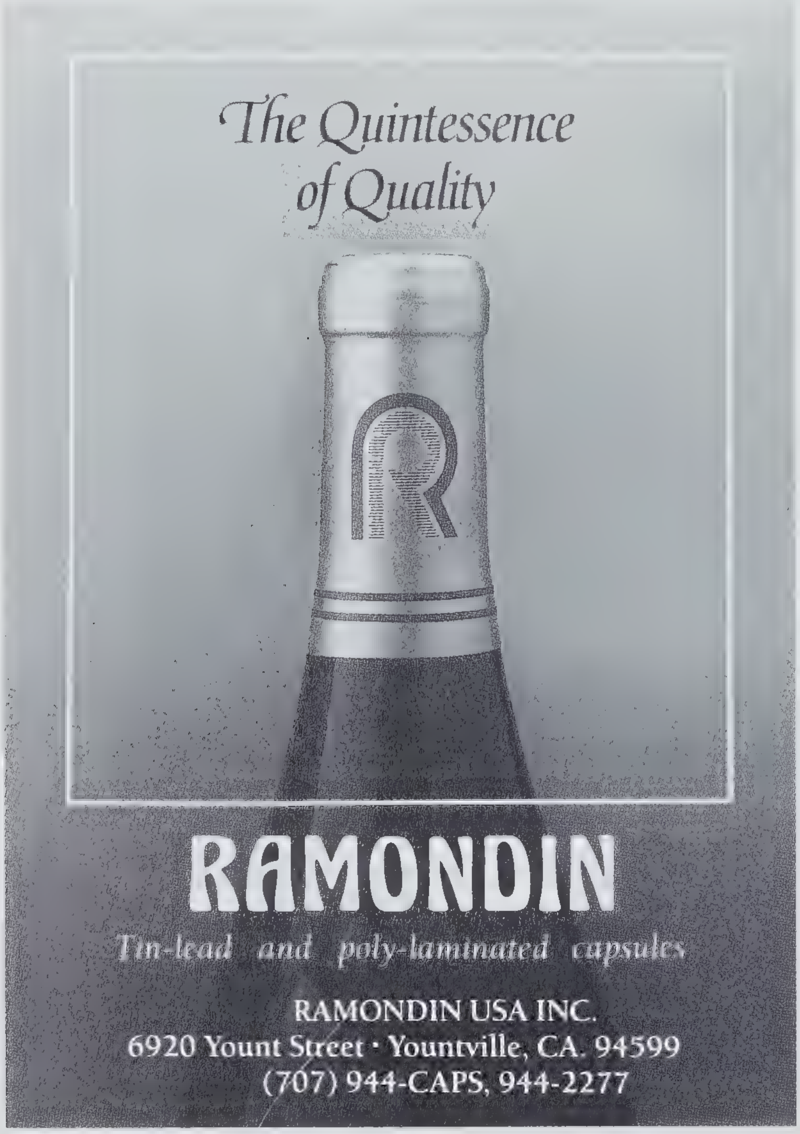
Desserts, on the other hand, demand contrast rather than complement, according to Sebastian. "If you have a somewhat acidic dessert, such as a lemon tart or fresh fruit, then you want a wine with some sweetness to balance it. If you have something that is rich rather than acidic, you need a wine with a slight bite to it to cut through that richness."

The Wooden Angel is a wine-oriented restaurant—the tables are set with wine glasses, there are wine posters on the walls—and customers expect to have wine with their meals. The wine list includes tasting notes and recommendations on when the wines are ready to drink. The price range varies from $8.00/bottle to $175, but less than half the wines are over $20—mark-up is 75—90% over cost. "We would rather sell two bottles at less than $12 than one at more than $20," says Sebastian. By-the-glass selections range from $2.25 to $4.50 for a six-ounce pour.

The wine list includes only American varietal wines, from Long Island, the Finger Lakes region, Virginia, Oregon, Washington, Idaho, Pennsylvania, Maryland, and California. "I made the decision in the early 1970s that if I wanted to sell American wines to accompany the restaurant's American cuisine, I would have to drop imports from the list. That decision has really worked."

The above techniques have proved successful for Sebastian and the Wooden Angel in terms of selling more wine. Wineries approaching restaurateurs might offer the following suggestions: 1) Have the waitstaff suggest two or more of your wines to serve before dinner and invite customers to share tastes; 2) Point out foods on the menu that would be appropriate with your wines, and suggest that the waitstaff recommend those combinations; 3) Suggest and participate in a 'Winery of the Month' program; 4) Offer to have a winery representative come to the restaurant to train the waitstaff in wine knowledge and service; and 5) Provide tasting notes on your wines to be included in the menu.

"With my staff to guide them in making appropriate food/wine combination decisions," Sebastian concludes, "customers are more willing to become exposed to wine. The more exposure inexperienced customers have, the greater the chance of their ordering wine with the next meal—which results in selling more bottles."



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Chardonnay Vinification Techniques Surveyed

PRACTICAL WINERY recently conducted a survey of American wine producers to determine styles, preferences, and trends in production of Chardonnay table wine. Following are the results, based on responses from over 200 wineries.

Seventy-five percent of the respondents produce a Chardonnay with a suggested retail price of $9.00–$16.00. Twenty percent of those polled price their Chardonnay under $9.00, while 5% price their Chardonnay over $16.00.

Not surprisingly, most Chardonnay grapes are harvested from regions I and II, with only a smattering in region III. The desired harvest window is 20–24° Brix, titratable acidity of 0.70–1.2 g/100mL, and pH 3.0–3.4.

Grape Harvesting

Most Chardonnay is hand-picked, with a few wineries opting for a combination of hand-picked and machine-harvested grapes. Almost no one uses exclusively machine-harvested grapes. Small producers are more likely to hand-harvest only; producers of over 25,000 cases/year are more likely to use both hand and machine-harvest methods. All wines over $16 are hand-harvested only, while lower-priced wines are more likely to have been harvested by both methods.

Most Chardonnay grapes are crushed and destemmed. Six percent crush only, and 5.5% whole-cluster press. Crushing only (without destemming) and pressing of whole clusters occurs predominantly on higher-priced wines.

Juice Processing

Wineries are divided on the question of skin contact. Thirty percent allow essentially no skin contact, but 20% choose 1–3 hours, while the remaining 50% is almost evenly split between 3–9 hours and 9–24 hours. Over 24 hours is rarely given. No skin contact tends to be used mostly on higher-priced wines. Over 7% chill grapes before processing. Most others chill the must from the crusher. Nearly 75% of the wineries chill the juice in jacketed tanks, while 14% do not chill at all.

The range of desired pressing temperatures is 42–72°F. Nearly 40% use a tank membrane press, with 33% using a pneumatic bladder press and 22% choosing a horizontal screw press.

The average settling temperature is 48.8°F, with a range of 32–72°F. Most wineries settle 12–24 hours and rack off the gross lees. Twenty-five percent opt for 24–36 hours settling. Only a few opt for less than 12 hours or more than 36 hours, and some do not settle. Thirty percent of the respondents desired juice aeration.

Fermentation

Those who inoculate with yeast (all but 2.5%) use the following yeasts in order of preference: Champagne, Montrachet, Epernay II, Prise de Mousse, and Chanson. Champagne and Montrachet together account for 50% of the respondents' preferred yeast.

Respondents are split between barrel fermentation and fermenting in stainless-steel tanks. Fifty wineries combine the two. Fifteen use puncheons, with almost no one using large wooden tanks. The desired fermentation temperature of 131 wineries is 50–60°F, with 74 choosing to ferment at greater than 60°F, and 20 fermenting at less than 50°F.

Thirty-seven percent of the respondents never have problems with stuck fermentations in Chardonnay, while about 40% seldom have problems. Twenty percent occasionally have problems. Less than 5% have frequent problems.

Malolactic Fermentation

Winemakers are almost evenly split on the concept of malolactic fermentation in Chardonnay, with 46% encouraging it and 54% avoiding it. Malolactic fermentation is used more frequently on higher-priced wines and in cooler regions. Of those who encourage ML, slightly more than one-third complete, while the other two-thirds achieve only partial completion. Eighty-two percent of those encouraging ML inoculate, with

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just over 17% allowing spontaneous fermentation. Fifty percent of those who inoculate for ML do so during alcoholic fermentation, with 30% inoculating immediately after primary fermentation and 17% inoculating later during barrel ageing.

Barrel Ageing

Forty-eight percent of the respondents age Chardonnay on light lees, while 35% choose to age on primary lees. Some rack their wine clean, while 6.5% clarify the wine. Four percent centrifuge before barrel ageing and 2% do so before bottling.

Respondents are split almost 50/50 on the question of barrel-ageing time, a slight edge going to those who choose to age Chardonnay for 3 - 6 months and most of the remainder opting for 6–12 months. A few barrel-age less than three months, with virtually no one doing no barrel-ageing at all or barrel-ageing longer than 12 months.

Sixty-gallon barrels are the preferred size, with 26 respondents choosing puncheons, and 13 using oak tanks. French oak is a clear favorite over American or a mixture of French and American barrels. Most winemakers age Chardonnay in barrels bung-up, while 13% roll the barrels.

Over 35% of the respondents top every 2–4 weeks. Twenty-seven percent top every 1–2 weeks, while about 15% top weekly and another 15% top every 1–3 months. Three percent never top, and 2.5% do so only every 3–6 months.

Heat Stability

Heat stability is generally achieved by adding bentonite to the wine, with a few adding bentonite to juice and others choosing a combination of the two. Two-thirds of the respondents bentonite-fine just prior to bottling, with most of the remainder doing so before barrel-ageing. Bentonite-fining before barrel-ageing is most likely to be practiced by large producers and for lower-priced wines. The total bentonite level ranges from 0.5–9.0 lbs/1,000 gal. Heat stability is checked by half the respondents by heating a sample to 140°F; nearly a third heat a sample to 120°F.

Filtration

Thirty-three percent of the respondents do a DE filtration before bottling, with 13% doing so before barrel ageing. Thirty-six percent do a rough-pad filtration before bottling, while over 70% do a pre-bottling tight-pad filtration. Less than 5% do a rough-pad filtration before barrel ageing, and only 1% do a tight-pad filtration prior to barrel ageing. Twenty-five percent of the respondents employ a larger-than-0.45μ membrane filtration before bottling, while 47% use a 0.45μ or tighter.

Fining Agents

About 40% of the respondents use fining agents in the following order of preference: gelatin, isinglass, kieselsol, casein, and PVPP. The other 60% use none of these fining agents. Of the 40% who do, only 25% use these fining agents frequently; the rest use them only occasionally.

Cold Stabilization

Less than 20% of the respondents do not cold-stabilize their wines. Higher-priced wines are most likely to have not been cold-stabilized. Sixty-six percent of all respondents who *do* cold-stabilize hold the wine less than one month in a chilled tank. Only 8.5% cold-stabilize by holding the wine longer than one month in a chilled tank. Twenty-four percent seed to assist cold-stabilization. Most respondents check cold stability either by checking a refrigerated sample after less than two weeks, or by checking a freeze sample.

SO_2 Levels

The average level of free SO_2 in juice is 15.9 ppm and the total is 31.4 ppm. The average free SO_2 during ageing is 24.7 ppm and the total is 65.2 ppm. The average free SO_2 at bottling is 28.6 ppm and the total is 88.3 ppm.

Bottle Ageing

Forty percent of the wineries bottle-age their wines 6–12 months prior to release. Thirty percent bottle-age the wines for 3–6 months prior to release. Twenty percent bottle-age wines for more than 12 months, while 10% bottle-age less than three months prior to release. Higher-priced wines are most likely to have over a year of bottle-ageing. Wines from region III are most likely to be shipped sooner.

PRACTICAL WINERY would like to thank Sonoma-Cutrer Vineyards, Windsor, CA, for their invaluable assistance with data collection for this survey.

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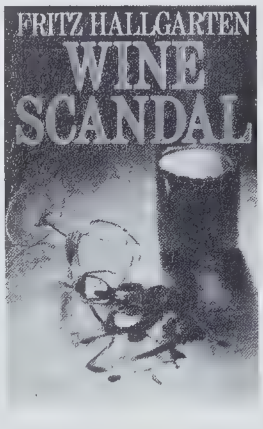
by Fritz Hallgarten
Foreword by Leon D. Adams



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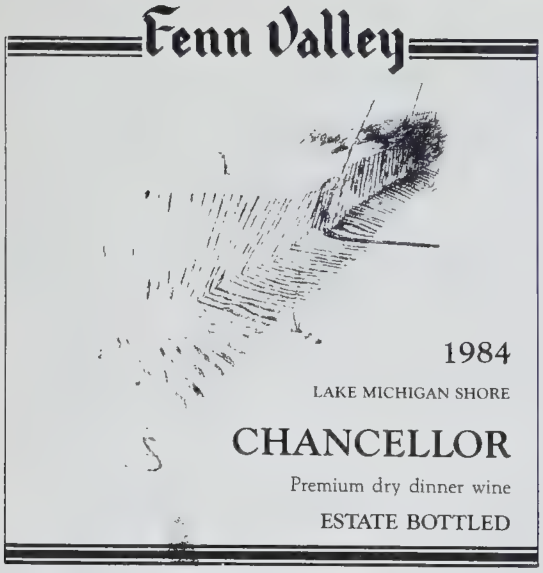

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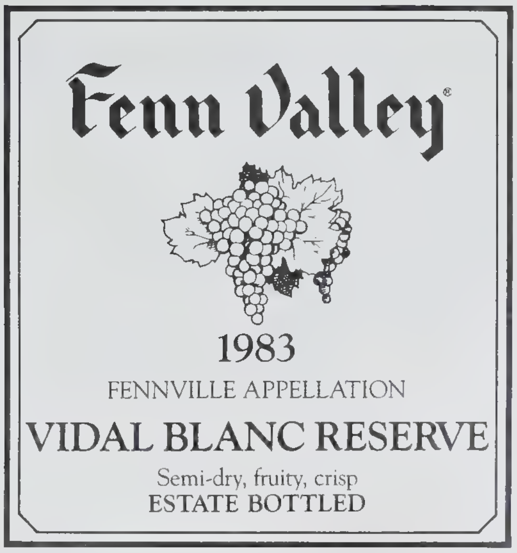

Planting of wine grape varieties began in the state of Michigan in the late 1960s. With less than two decades of experience in wine production, Michigan wineries have had to rethink their situation and face several realities. Some widely-planted hybrid varieties do not make good wine; others do make good wine but are not planted. Those varieties that have found success in other regions may be planted in a poorly suited climate or on unfit soils.

Inappropriate pruning methods or training/trellising systems have not maximized production. A grape variety may grow successfully, but vinicultural techniques have not been mastered. Experimentation is expensive and time-consuming, but the effort is necessary if Michigan winegrowers hope to produce world-class wines.

While the following looks at a single Michigan winery, it has echoes throughout the eastern U.S. wine industry.

"We did everything wrong when we began in 1973. Today, we look back on our mistakes as the way we could learn. Nobody knew what they were doing in this region, so we went to growers in New York who told us to plant DeChaunac—today, no winery wants that grape."—Doug Welsch.

These comments began Welsch's narration of a 12-year trial that is only recently yielding success. Hopeful for the future, Welsch took us back in time to square one.

Early in 1973, 230 acres were purchased near Fennville, Michigan, specifically to grow grapes and make wine. Fenn Valley Vineyards (FVV) is located five miles east of Lake Michigan and 15 miles south of Holland, in a fruit region.

The property has all three elements that Nelson Shaulis and Willard Robinson (both retired from the Cornell University Ag. Exp. Station at Geneva, New York) said were most important in determining a vineyard site: 1) high elevation of 680 feet (100 feet above Lake Michigan); 2) tempered climate from the lake providing 2,800 degree days/year, 180-187 growing days, summer highs of 90-95°F and winter lows of 0 to -10°F; and 3) 80 feet of sandy subsoil for good drainage and in some vineyard areas a clay lens, 2-4 feet deep and 6-10 inches thick.

Land/Soil Development

"In developing the vineyard," recalls Welsch, "we had to clear and reshape the land. The property was principally planted to peach and cherry orchards. We hired someone to remove the orchards and essentially everything else, because we didn't have any equipment." Specialists in land and soil management were employed to plan drainage of air and water. It took two years of removing trees, cleaning up and contouring to get ready to plant vineyards.

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Many thanks to those who have completed and returned their questionnaires.

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While the vineyard was being developed, FVV bought grapes from vineyards in Michigan, Pennsylvania and New York. In the fall of 1975 and 1976, many wineries in these states were having financial trouble and growers were happy to find someone who could purchase their grapes.

Welsch stated, "When the farm was purchased, the topsoil was depleted of organic matter and could not support vegetation—not even lichens, let alone grass or vines. We built the soil by fertilizing and by growing beans and sudan grass which were plowed under each fall. The rebuilding program has improved the soil and helped resist erosion. A covercrop of oats is maintained during the last half of each growing season to keep soil from literally blowing away. The mulching also holds water, prevents erosion and keeps weeds down."

Land not planted to grapes is used for growing hay and alfalfa. Hay is bundled in large, round bales. Rolled out between vineyard rows and under vines in August (approximately six weeks before harvest), it allows access, even in wet weather. Hay decomposes and is then worked into the soil with a rotary hoe the following spring. "Hay provides three things," describes Welsch, "weed control, soil building and a firmer walking surface during harvest—it's better than mud! It's like picking grapes while standing on a carpet.

Selecting the Best Cultivars

"I firmly believe, as does anybody in this industry, that quality wine is determined in the vineyard. Everything that we do from that point only detracts.

"Within three years of start-up, we had 50 acres in vines, mostly reds. Since then, we've pulled up all reds except Foch, and added Chancellor and Chambourcin—those are the reds

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Fenn Valley encourages a deep root system by digging a 4-foot-deep hole with a 16-inch hydraulic auger. This creates a 'flower pot' where roots can expand and penetrate clay, since they don't push easily into virgin compact soil. The hole is backfilled slightly and the vine put into the large volume of broken-up soil. Roots penetrate very easily and produce a stronger vine that gives a larger crop earlier in the life of the vine.

with which we will continue to work. In replanting what's right for this area, we dropped to 20 acres and now we're replanting again with the previous three reds, three white hybrids—Seyval, Vidal, Vignoles—and three white *vinifera*—Riesling, Chardonnay and Gewurztraminer." Welsch's replanting decision resulted in Baco noir, DeChaunac, Cascade, Chelois, Villard blanc, and most Aurore being pulled out. To enhance color in red wines, 100 Colobel vines were kept for blending.

"Climate tells me which variety to plant, soil tells me where to plant," continued Welsch. "Vidal, Foch, Vignoles, and hardy varieties can be grown in clay-bearing soils because they are more tolerant of wet roots. Seyval, which is not, goes into light, sandy soil. *Vinifera* are planted on high (680 feet elevation), south-facing slopes, contoured for better water and air drainage. *Vinifera* vines are prone to crown gall and must be planted on light, sandy soil.

"Among *viniferas*, Chardonnay, planted on 5 BB rootstock, has the best potential in Michigan. It does better than Riesling in terms of ripening, yield and hardiness. Other growers have said Riesling was great, but that's only because no one seriously tried to grow Chardonnay here. There are no major viticultual problems. The problems to be solved are found in the winery.

"Some cool-climate Chardonnay develops a buttery character, others exhibit appley fruit. Through the 1983 vintage, our Chardonnay totally lacked character. It was not worth the $7.50 we asked. We instituted 12-hour skin contact, malolactic fermentation, and French oak ageing, which have solved the enological problems. The 1984 and 1985 vintages have great characteristics, and we will now consider expanding our Chardonnay acreage."

One-half acre of Gewurztraminer, planted in 1983 on 5 BB, was FVV's first commercial planting of this cultivar. Welsch has had 30-40 Gewurztraminer vines growing experimentally for several years prior and believes they will do well.

Frost Control

On cold, frosty nights, air trapped in low pockets can damage vines. The land was contoured to give a 2-3% south-facing slope and wide, concave paths opened, far wider than needed to handle water drainage, deliberately to facilitate drainage of cold air.

Welsch explains, "We disc our vineyards in May for frost control. Bare ground radiates stored heat energy. A bud over bare ground can be up to 3°F warmer than if it were over trashy ground. On clear, frosty nights, it is possible for a bud to cool below air temperature, particularly if the ground below is prevented from radiating heat due to surface vegetation. We have also installed overhead sprinklers that can be used for frost control."

Spacing, Training, and Trellising

All vines are planted with 10-foot rows. *Vinifera* are planted 5 feet between vines; red hybrids are spaced 7–8 feet apart, white hybrids 6.25–7 feet apart.

Initial vinifera plantings at FVV were 'low head' pruned and trained. FVV has now changed its trellising system for all *vinifera*. Welsch observed a new method in Germany in 1976 and recently in use at Markko Vineyard in Ohio.

Initially, they experimented with a cross between the old 'low head' and 'high head'. "We tried the modified German method on 3-year-old Riesling, grafted onto 5 BB rootstock," recalls Welsch. "We took one side of the vine, looped it over and tied it just like we used to. We took the cane of the other trunk (at that point they have only two trunks) and ran it straight up. We didn't spend a lot of time tying them; we just wanted to see the growth pattern.

"When pruning the following year (winter 1983-84), we found that wood originating higher on the vertical trunk had far greater bud survival. When we cut buds in spring, we found 10-15% bud mortality from wood properly exposed, but

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the lower wood had 40% bud mortality. This difference could double your crop."

The following chart summarizes 1986 pruning.

CANE PRUNING		
Varietal	**Total Buds**	**Cluster thin to (clusters/shoot)**
Seyval	16–38	0.75–1.25
Vidal	18–36	1.3
Chancellor	22–34	1
Riesling	45–50	No thinning
Chardonnay	30–38	1
Gewurztraminer	40–60	No thinning
GENEVA DOUBLE CURTAIN		
Foch	Average 75 buds/vine	
Vignoles	Average 60 buds/vine	

FVV's present training system uses three wires placed at three, four and six feet. A permanent cordon on the 4-foot wire produces canes that are tied to the top wire. These canes are not allowed to bear fruit, but will become spurs for the following season. In the second season, each vertical cane is bent down and tied to the bottom wire where its buds produce fruit.

"When a vine matures," Welsch adds, "we take a cane where we want a spur to originate the following year, and tie it to the top wire. Buds on the lower spur bear fruit on the open trellis. It is important that canes tied to the top wire provide spurs for the following season. They get more sun; therefore, buds produced from this sun-ripened wood show low mortality in a severe winter that goes below -10°F. Sunlight makes the difference; any cane that has been ripened in the sun survives much better than one ripened in shade."

FVV's previous system left canes looped over a low wire and tied to the bottom wire. The next season's fruit-bearing sites were ripened low and in shade.

Weed and Disease Control

In 1984, a pre-emergent herbicide was used on all vineyards to control grasses and annuals. "Now, our weed control program avoids the use of contact herbicides in our *vinifera* vineyards," Welsch explains. "We are continually renewing *vinifera* trunks with suckers from ground level. This means there's always danger of vine damage when contact herbicides are used on a regular basis. In addition, *vinifera* are grown closer to the ground than hybrids. Both of these factors make herbicide application nearly impossible.

"*Vinifera* weed control is done with mulching, rotary hoe and hand weeding. We have found that after mulching in a vineyard for several years, we don't get any weeds. We use limited application of contact herbicides with hybrids because they are stronger plants, not needing regular trunk renewal and grown higher off the ground."

Experiments with grafted and ungrafted *vinifera* vines have convinced Welsch to used grafted *vinifera* vines exclusively because crown gall has not developed on the grafted vines. "Late in 1984," continues Welsch, "We learned that recent research seems to indicate that crown gall is systemic. That means the reason our ungrafted vineyards suffer so much from the disease is because the ungrafted stock was infected when planted.

"Crown gall spreads, as do some bacterial infections, from the actions of man. Environment and the presence or absence of a rootstock may influence how or if the disease is manifested. Current thought, however, is that, had we used clean stock, crown gall would not have appeared as soon on any of the vine treatments."

FVV has developed a spray model for each cultivar. In 1985, Seyval and Vidal, the major white hybrids, were sprayed May 21 at 4–6" shoot growth for black rot and downy mildew; June 15 was first bloom and June 29 post-bloom; first fall cover was applied August 18 for black rot and powdery mildew; second cover for powdery mildew was made September 4. After late September rains, additional applications are made to combat a

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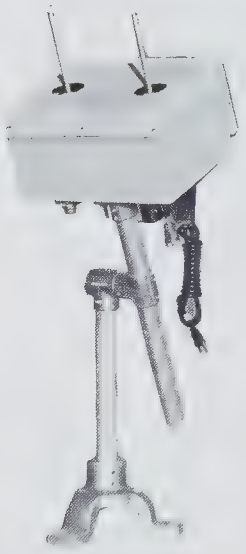

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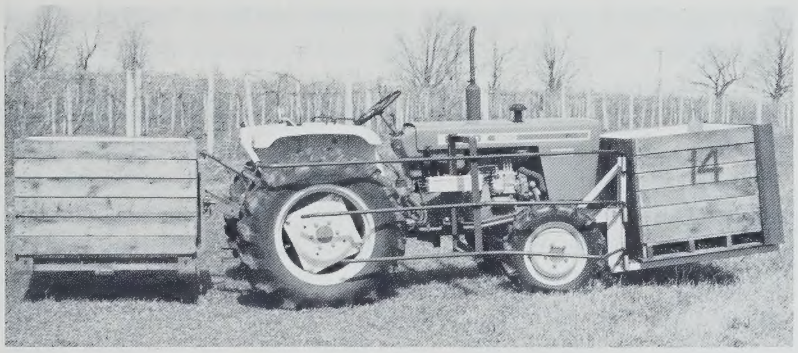

Fenn Valley has developed a picking system that operates as fast as a field crusher, according to Welsch. Tractors with forks on the front and back allow eight pickers to dump into two bins, one in front and one in back. When bins are full, they are driven to the end of the row, lifted onto a flatbed truck and hauled to the winery.

powdery mildew outbreak. Vignoles is susceptible to botrytis and requires a protectant spray in mid-September.

With the white *vinifera*, Riesling and Chardonnay, spraying began May 21 for black rot and downy mildew at 4–8″ shoot growth; June 16, first bloom spray plus botrytis treatment; June 29, post-bloom spray; July 24, leaf hopper and cover; August 14, first fall cover for black rot and powdery mildew; September 8, second cover plus powdery mildew, and September 17, black rot, powdery mildew, and botrytis treatments.

Red hybrids were sprayed May 13 for black rot and downy mildew at 4 - 8″ shoot growth; May 28 a second pre-bloom spray was applied; June 5, first bloom spray and June 16, second bloom. Leaf hopper and cover was applied July 24, first fall cover August 16, and second cover plus powdery mildew on September 7.

Making A Good Red Wine

Each vintage, FVV has had trouble with Foch. It developed a noticeable stemmy, hybrid taste. Welsch explained, "Lisa Van de Water (The Wine Lab, Napa, CA) was here to help us with a bacterial problem that we had picked up from a load of grapes. She suggested that we try adding 10-15% whole clusters, similar to what people in California were doing with Pinot Noir. We experimented in 2,000-gallon fermentation tanks and did partial whole-cluster fermentation with punching down.

"Some batches had stems added back, some did not. Some had whole clusters and others none. A library of these wines was kept. When we tasted the wines, we found that the method using 30% whole clusters was ideal. It masks the weedy taste of Foch." Research seems to indicate that whole cluster return, in a cool climate, produces a wine which is less tannic, has a slightly lower color and is fruity. Stem return lowers color, increases total phenolics and adds a spicy character.

Robert Mayberry, a knowledgeable wine writer in Michigan, has tasted the final product and pronounced the FVV Foch to be reminiscent of Rhone wine. FVV is presently experimenting with ageing Foch in new American oak to complement the tannin from the skins and fruit flavor from whole-cluster fermentation. Welsch expects the red wine to age well.

Welsch has found success using the same method with Chancellor. June 1986 marked the release of FVV's first Chancellor under a new artist series label depicting the Lake Michigan shore. He believes there is hope for a good red wine in the eastern United States. According to Welsch, "The problem may not be the grape varieties, but the vinification method."

Continuing Experiments

FVV is currently cooperating with Michigan State University (MSU) Dept. of Horticulture on several research topics of mutual interest. In 1982, MSU began a ten-year research project for graduate horticulture students under the direction of Dr. Gordon Stanley Howell.

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with Riesling, Gewurztraminer and Chardonnay grafted on every rootstock FVV could obtain, the students are investigating the effect of rootstock on scion, wine flavor, vine survival rate and long-term yields.

Welsch remarked, "When we first started our experiments, we found rootstock/scion incompatability and rootstock/soil incompatability. From this we found 2 or 3 rootstocks that were best for our soil. 5 BB is best because the vines seem hardier and we get a consistent crop every year. 3309 is our second choice and if we have to, we will go to SO4, although it does not seem to do as well. Because of what we learned from this project, all subsequent *vinifera* plantings have been on 5 BB. All *vinifera* plantings are on sandy soil. Areas with clay lenses have proven unsuccessful and the vines have been removed.

"We pruned all vines the same way and found that specific rootstocks produced different yields; 5 BB didn't bear many grapes but was consistent and had good fruit. 3309 tends to bear heavily, hence fruit quality is diminished. Self-rooted Riesling bears about as heavily as 3309 but had half the vigor. Those vines showed stress and the fruit never ripened fully. We didn't measure tons/acre because we believe that wine growing is as much art as it is science."

Welsch explained that when they pruned they would just look at the vine and say, "Yes, this is better than that." MSU students are continuing Welsch's original experiments. They train each vine by the same method, take wood weights and prune to adjust bud count depending on the vigor of the individual vine. During the winter, they check bud hardiness by taking samples from frozen buds to see how many have died.

"Industry support of MSU's research effort is very important," Welsch declares. "One hand washes the other. We provide a place for young people to learn firsthand and for the university to do research. The results help us to select new hybrids and improve our growing techniques."

Marketing

Welsch noted, "We can't grow Chardonnay, Riesling, and Gewurztraminer economically. The wine has to sell between $6-7.50. Once you pass $4.50, you're in a tough market. We would like to make 700-1,000 gallons of Riesling per year. We can make a good wine from Vidal or Seyval, but it will never have the appeal that Riesling has, because people don't drink wine in this country—they drink labels. I hate that, but that's the way it is. We are going to make *vinifera*, but only for those who drink paper—and they will pay the price. Unfortunately, they may have passed up an excellent bottle of Seyval for half the money. We make more Vidal (2,000 gallons) than anything else because it sells.

"To attract the more sophisticated consumer, we introduced a new line of dry (less than 0.6% RS), barrel-aged, hybrid wines. In 1983, this amounted to 10% of our production, which sold out by the summer following harvest. Our customers like the wines and returned to buy more; we had underestimated the demand. In 1984, we increased our dry wine production to 20% of the total. In 1985, 40% was dry, at less than 1% residual sugar, and 60% was sweet with more than 1% residual sugar.

"We identify these wines with a distinctive blue label. Our regular line carries a white label. When repeat customers ask about a wine they want to purchase, they can identify it by the label color and we can keep track of what people are buying. An easily recognizable package is an important marketing tool.

"Winning medals in wine competitions used to give us an increased sales of 20-30% for several weeks after announcements went out. Now, the novelty has worn off. We have reduced participation to two competitions annually, the Michigan State Fair and Wineries Unlimited.

"Our sales increase about 3-4% each year, but we still cannot sell our total production as case goods. Some of our crop is sold as fruit or juice to other wineries, some as bulk wines and we also do some custom labeling.

"Surprisingly, our biggest sales increase has been in red wines. We will never be known for our red wines, but we are making some very respectable examples. We now have one acre of Chancellor, four acres of Foch and a ½ acre experimental plot of Chambourcin. We have increased red wine sales from 4% to 8% of total production. That may not seem like much, but that's a large quantity of red wine for us. The key to success is in our vinification method, discussed earlier.

"We have also kept our prices down. The average bottle price of FVV wine is still $4.50. We have also had good response to magnums and 3-litre jugs. Half of our sales of Vin Blanc and 20% of Ruby Red and rosé is in large bottles.

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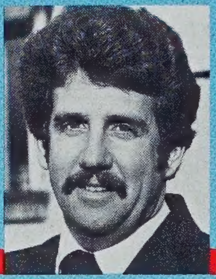

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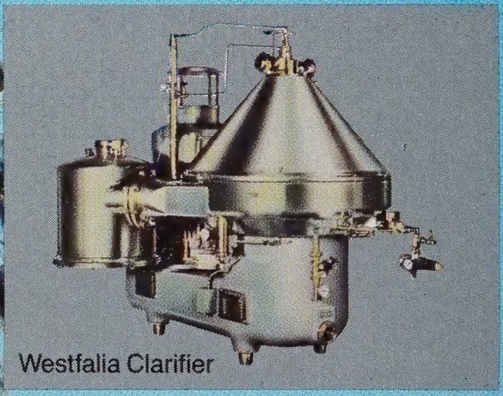

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